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Evaluation of A.I.D. Family Planning Programs
Tunisia Case Study

by

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TABLE OF CONTENTS

FIGURES AND TABLES

Figures

Tables

PREFACE

The Center for Development Information and Evaluation (CDIE) initiated the current series of case studies of family planning in October 1990, with an examination of the Kenya program. In all CDIE will have looked at Agency for International Development program efforts in six countries, focusing above the project level and using a common scope of work and format to identify broader accomplishments for each country studied. Less attention is given to inputs and outputs and more attention is given to *results*. The case studies focus on completed, as opposed to ongoing, programs and projects.

CDIE wishes to acknowledge the contribution of Dr. Thomas Pullum, professor, Department of Sociology of the University of Texas (Austin), who prepared major portions of the impact section of this report. CDIE wishes also to express appreciation to the Director and staff of USAID/Tunisia for their assistance in planning and conducting the field study.

SUMMARY

Background

The Agency for International Development (A.I.D.), like other donors, has identified population as among the most critical problems to be addressed in the 21st century. Given the importance of population as a development concern, the Center for Development Information and Evaluation (CDIE) at A.I.D. has selected it as a key sector of focus for CDIE's evaluation agenda.

This study analyzes A.I.D.'s contributions to the effectiveness, efficiency, sustainability, and impact of the Tunisia family planning program during a 25-year period, 1965 through 1990, and to identify lessons learned. The five-member evaluation team spent 4 weeks in Tunisia in spring 1992. The team employed a relatively straightforward methodology that included: key informant interviews, document review, service statistics analysis, FamPlan model application, and focus group research.

Donor Assistance to the Tunisia Family Planning Program

Since the mid-1960s, A.I.D. has been the primary donor supporting family planning activities in Tunisia. A.I.D. dollar-denominated assistance in population and family planning provided from 1965 through 1990 to the Office National de la Famille et de la Population (ONFP)—the agency primarily responsible for implementing the family planning program—totaled approximately $50 million.

Two other major donors were the United Nations Population Fund (UNFPA) and the World Bank. From 1974-1991, UNFPA completed four projects in health and population totaling $18.4 million. About one-half of this amount went to ONFP. During approximately the same time, the World Bank also completed two health and population projects totaling $17.3 million.

A.I.D. funding for family planning—averaging nearly $2 million per year over 25 years—is a significant amount for a small country with a population of only eight million. What has been achieved?

Major Findings

Impact

Demographic impact. Tunisia's total fertility rate declined dramatically during the 1970s and 1980s. The rate is estimated to have been 7.2 in 1966, 5.8 in 1976, and 4.5 in 1986. In addition, contraceptive prevalence increased from negligible levels in the mid-1960s to 31.4 percent in 1978 and 49.8 percent in 1988. Much of the early decline in fertility may have been produced by rising age at marriage, but almost all of the decline in the 1980s can be attributed to increased use of contraception, stimulated by a desire for smaller families. The family planning program has been successful in meeting demand for family planning services. Moreover, contraceptive use is greater than international comparisons would suggest given the relatively low level of female education in Tunisia. There is strong evidence that contraceptive use is greater for women who have heard media messages on the subject or who have easier access to services. Increased use of two methods strongly promoted by the program, intrauterine devices (IUDs) and female sterilization, accounted for 70 percent of the increase in prevalence during the decade from 1978 to 1988. Public sector facilities were overwhelmingly the source for these methods. Thus evidence suggests that the Tunisia family planning program is a major determinant of contraceptive use in general (as well as of the use of specific methods) and that it has successfully increased the demand for services over the demand that might otherwise have been expected.

Health impact on infants and children. The Tunisia family planning program may have had some indirect effect on the observed decline in infant and child mortality, but only a minor one. There was a modest reduction in the proportion of women having children fewer than 24 months apart. It is estimated that one-fifth of the decline in infant and child mortality that occurred between the mid-1970s and the mid-1980s was the result of an improved distribution across risk categories.

Health impact on women. To the extent that the Tunisia family planning program enabled women to reduce the number of unwanted pregnancies and abortions by making contraceptives available, it also contributed to women's health and well-being. Tunisian researchers have shown that more than one abortion has negative health consequences for the woman. In Tunisia between 1976 and 1991, the number of abortions performed in public sector facilities remained at approximately the same level (between 20,000 and 25,000), while the number of married women of reproductive age increased by over 50 percent. Moreover, between 1988 and 1989, abortions declined by 9.35 percent (ONFP 1989).

Socioeconomic impact. Using the FamPlan model, the evaluation team estimated the savings resulting from reduced fertility in Government expenditures in health and education—two social sectors strongly linked to population size. The FamPlan model projects for these sectors the expenditures that would be required to service the population over the given time period, based on assumptions about the level of effort of the family planning program and the impact on lowering overall population over time. Estimated Government savings in health and education were realized in the second year of the program. Estimated net savings (sectoral savings minus the cost of family planning) were realized in 1975 and rose from $116 thousand in 1975 to $250 million in 1991. Cumulative savings of $952 million were estimated for the entire period.

Effectiveness

Using the CDIE definition of effectiveness (use, coverage, and access), the team concluded that from 1980 through 1988 the program was very effective in increasing the use of two highly effective, modern contraceptive methods (the IUD and female sterilization) through very good quality of care in both (as reflected in respectable IUD continuation rates and low rates of complications for sterilizations). This finding is especially important given that acceptors of all methods were declining in the late 1970s and that female sterilization was the second least used method at that time. The program was also very effective in extending access for poor and uneducated women to modern, clinical methods, especially female sterilization, and in extending coverage. Program effectiveness during the 1980s was constrained by continuing disparities in urban/rural access; by the inability to combat widespread myths concerning all methods, including male sterilization; by lack of improvements in pill continuation rates; by failure to exploit fully the private sector; and by failure to promote and educate clients about male sterilization.

In view of the declines in two key indicators by 1989 (the decline in the rate-of-increase in births averted from 10 percent annually in the 1980s to 2 percent in 1991 and the decline in 1990 of acceptors of IUDs, pills, and female sterilizations after a decade of steady growth), the team concluded that *ONFP had difficulty in further improving and sustaining program effectiveness between 1989 and 1991.* This may have been partially attributable to ONFP's difficulties in procuring contraceptive commodities in mid-1990, when A.I.D.-provided commodities came to an end, as well as to a range of programmatic, economic, and political factors.

Efficiency

The Tunisia family planning program appears to have been cost effective. Analyses show that, in 1985, the mobile units, which provide approximately one-third of total family planning output, had a cost per couple years of protection (CYP) with tubal ligation of $18.66; in 1991, cost per CYP delivered by the total public sector program were $20.03. Programs that have per CYP costs in the $18 to $22 range are generally considered cost effective. The cumulative number of births averted from 1966 to 1991, calculated using the FamPlan model, was estimated at 1,310,595. The cost per birth averted was estimated to be around $45 from 1983 at the 1991 exchange rate.

Sustainability

Analyses and interviews suggest that, after termination of A.I.D. bilateral assistance in 1990, the family planning program did not provide benefits (especially contraceptive commodities; training; information, education communication [IEC]; and research) at the same level as when A.I.D. provided funding. Whereas prospects for the continuation of the program are good because of strong political commitment, the *level and scope* of benefits appear to have already declined and may continue to decline over the next several years as the Government of Tunisia struggles to find funds for program components and contraceptive procurement.

A.I.D.'s Contribution to Effectiveness and Impact

A.I.D. assistance made important contributions to the effectiveness and impact of the Tunisia family planning program, as a result of the following: (1) assistance helped diversify the modes of service delivery, thereby increasing *access* to family planning; (2) it supported training and technical assistance in highly effective clinical methods, thereby enhancing *contraceptive prevalence;* (3) it supported extensive training (in clinical methods, management, and service delivery) of professionals and fieldworkers, thereby contributing to improved *outreach*; and (4) it supported the establishment of training centers, thereby enhancing *institutional capacity*. A.I.D. provided assistance principally through support for technical assistance and training. Discussion of major contributions follows.

Access

Mobile units. To expand outreach and access in rural areas, A.I.D. provided $3.9 million (1981-1987) to the Population Council, principally to strengthen mobile units. By 1985, the number of new acceptors reached through mobile units had increased 54 percent over the number in 1982, when intensified support to the units began, and the units were producing one-third of the output of the entire family planning program. In some governorates, mobile units had contributed as much as 74 percent of program output (Coeytaux et al. 1989).

Private sector. A.I.D. supported the establishment of a contraceptive social marketing (CSM) program in 1986. By selling condoms and pills through about 1,000 private sector supply points, such as pharmacies, the program increased access to contraceptives. However, much remains to be done to exploit this underused resource. Because the CSM program was initiated much later in the period under study than were other interventions—and for other reasons outlined in the report—it contributed less to impact.

Contraceptive Prevalence

Female sterilization. In the late 1970s, female sterilization was one of the least used contraceptive methods. In 1977, A.I.D. helped fund the establishment of the Ariana Clinic for training in surgical contraception and introduced what was then considered a revolutionary surgical technique—laparoscopy. By 1988, female sterilization was the second most used method in Tunisia and accounted for 25 percent of the increase in prevalence between 1978 and 1988 (Ayad, Sayed, and Way n.d.).

Training in and provision of IUDs. A.I.D.'s funding of the Program for International Training in Health and Johns Hopkins Program for International Education in Gynecology and Obstetrics to train midwives, physicians, and trainers in IUD insertion in the late 1970s and the 1980s made an important contribution to the increase in prevalence. By 1988, IUDs were the most used method and increased use of IUDs accounted for over 45 percent of the increase in prevalence between 1978 and 1988 (Ayad, Sayed, and Way n.d.).

Surveys and analyses to monitor contraceptive prevalence. A.I.D. funded three major surveys—in 1978, 1983, and 1988—to monitor contraceptive prevalence rates. Tunisian family planning managers cited these surveys as important tools for monitoring program performance. These and other analyses were instrumental in calling attention to a plateauing of new acceptors in the late-1970s and thus helped mobilize strengthened donor and Government commitment to the program in the early 1980s.

Training, Outreach, and IEC

Interpersonal communication and education. A.I.D. funded education and interpersonal communication through the training of *animatrices* (health educators) and other personnel beginning in the late 1970s. The animatrices worked in the mobile units and clinics to counsel and motivate clients, especially through home outreach. A 1987 impact study (Coeytaux, Kilani, and McEvoy) showed that the addition of an outreach component to service centers increased the number of new acceptors by 125 percent, compared with the control group. By 1988, virtually all currently married Tunisian women of reproductive age knew of at least one family planning method.

Training. A.I.D. supported a wide range of training programs—medical, management, service delivery, and training of trainers—throughout the period of A.I.D. assistance. Between 1985 and 1989 alone, A.I.D. funding supported training at approximately one-third of the total number of centers that provided family planning services.

Sustainability

A.I.D. contributed in some ways to institutional sustainability, but it did not contribute to financial sustainability. It helped establish training centers (the Ariana Clinic for training in surgical contraceptive techniques and the National Training Center for training in service delivery and management). The Tunisian Government now has the capacity to train its own people in virtually all aspects of family planning. However, specific components of the program (such as management training, animatrices training, and operations research at headquarters in Tunis), which enhanced overall institutional capacity and benefited from A.I.D's assistance, will not offer the same level of benefits or outputs as when they were receiving A.I.D. funding.

A.I.D.'s support of the CSM program had not contributed to the financial sustainability of the program by the time A.I.D. terminated assistance in 1990. A price increase was needed to increase profits and reflect real costs, and the CSM program had not been privatized. The program may, however, reduce the budget necessary for the public sector program in the future. A.I.D. did not support any other analyses or pilot programs to test cost-recovery schemes.

Status of Women

Improvements in women's status in the 1950s, especially the raising of the legal age for marriage, appear to have made an important contribution to the fertility decline in the early years of the family planning program. Such increases probably resulted, in part, from extensive Government support beginning in the 1950s for social legislation to raise the legal age at marriage and advance women's rights in a wide range of areas. However, women's status in the late 1970s and the 1980s does not provide a wholly satisfactory explanation for the continuing fertility decline after the mid-1970s.

Despite considerable progress in advancing women's rights and equality before the law, the status of Tunisian women is still comparatively low. In the 1980s, approximately 60 percent of married women of reproductive age were without schooling. High female illiteracy made it difficult for women to take advantage of their rights before the law. And although Tunisian women are increasingly entering the workforce, Tunisian researchers have shown that relatively little relationship exists between fertility levels and female employment. Thus, women's status in the late 1970s and the 1980s does not satisfactorily explain the fertility decline in Tunisia.

GLOSSARY

A.I.D.	U. S. Agency for International Development
ABS	Annual Budget Submission
animatrices	health educators
AVSC	Association for Voluntary Surgical Contraception (formerly IPAVS)
CBR	crude birthrate
CDIE	Center for Development Information and Evaluation
CREPF	Centre Régional d'Education et du Planning Familial
CSM	contraceptive social marketing
CYP	couple years of protection
DHS	Demographic and Health Survey
FamPlan	Family Planning Program Evaluation, Planning, and Financial Analysis System of Models
FY	fiscal year
IEC	information, education, and communication
IMR	infant mortality rate
INTRAH	Program for International Training in Health
IPAVS	International Project of the Association for Voluntary Sterilization
IUD	intrauterine device

JHPIEGO	Johns Hopkins Program for International Education in Gynecology and Obstetrics
L-M Scale	Lapham-Mauldin Family Planning Program Effort Scale
NTC	National Training Center
ONFP	Office National de la Famille et de la Population (formerly ONPFP, Office National du Planning Familial et de la Population; name changed 1984)
ORT	oral rehydration therapy
PAC-I	Family Planning Training for Paramedical, Auxiliary, and Community Personnel project
PL	Public Law
RTT	Tunisian national broadcasting agency
Sage-Femmes	midwives
SEATS	Family Planning Service Expansion and Technical Support project
SOMARC	Contraceptive Social Marketing Project
TFR	total fertility rate
TPFP	Tunisia Population and Family Planning project
TRG	Training Resources Group
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Fund

MAP OF TUNISIA

1. INTRODUCTION

The Tunisia population program began as a limited pilot project in 1964, in the context of President Habib Bourguiba's efforts to raise the status of Tunisian women and develop the country. In 1966 the Government of Tunisia expanded the program nationally and, by 1968, the U.S. Agency for International Development (A.I.D.) had begun providing population assistance. Throughout the late 1960s and early 1970s, the program emphasized education, infrastructure development, and training of professional personnel to provide leadership and local expertise. It dispensed prenatal and postnatal services through hospitals and maternal and child health centers of the Ministry of Health.

In 1973, to coordinate population activities nationwide, the Government of Tunisia took a major step by establishing Office National du Planning Familial et de la Population (renamed Office National de la Famille et de la Population [ONFP] in 1984) under the Ministry of Health in Tunis, as a semiautonomous government agency. Over the years, ONFP created a three-tiered, increasingly decentralized administrative structure comprising ONFP, regional centers, and mobile units to deliver services. By 1992, the family planning program was active throughout the country, utilizing a much enhanced mobile outreach system with *sage-femmes* (midwives) as the key service providers and with *animatrices* (health educators) who provided family planning education and conducted home visits.

This examination of the Tunisia population program is one of six country case studies that A.I.D.'s Center for Development Information and Evaluation (CDIE) is conducting to assess A.I.D. assistance to family planning. As with other assessments planned by CDIE for other sectors, there are two purposes for this study. The first purpose is to examine the record of A.I.D.'s performance in carrying out family planning activities in terms of effectiveness, efficiency, and sustainability. The second purpose is to discover what longer term impact resulted from A.I.D.'s interventions.

A five-person team conducted the study in Tunisia from 22 April to 20 May 1992, nearly 1½ years after A.I.D. terminated its last bilateral population project. Just as the questions asked by this study were identical to those posed in the other five studies of this series, the methods and sources used in the fieldwork for the six projects were also similar. These methods included applying the FamPlan model and the Lapham-Mauldin Program Effort Scale (L-M Scale),

conducting key informant interviews and focus group sessions, analyzing service statistics, and reviewing documents.

There are two main audiences for this technical report: professionals identified with the population sector and individuals concerned more broadly with economic assistance programs and who have a particular interest in A.I.D.'s contributions to the development of Tunisia. As with all of these technical reports, the principal use of this study will be as a resource document for the published synthesis, which analyzes and summarizes data from the six country reports and other research on the sector done under CDIE auspices.

2. COUNTRY SETTING AND POLICY ENVIRONMENT

Public officials and scholars have long recognized Tunisia as the most progressive state in the Muslim world. Engaged in regular trade with Europe since the 13th century, and relatively united and culturally homogeneous since the 17th century, Tunisia in 1861 became the first Islamic country to produce a written constitution. Nearly a century later, in 1954, Tunisia won its political independence from France. In the same year, the country's first president, Habib Bourguiba, declared the legal equality of Tunisian women and established new laws governing women's status and rights (Personal Status Code). Such statutes were virtually unique in North Africa and the Middle East and reflected the President's profound and personal understanding of the difficulties Tunisian women faced: His mother bore him as her seventh child when she was 40 and she believed that she was too old for this last and unwanted pregnancy.

The Personal Status Code abrogated polygamy and abandonment, granted women equal rights in divorce proceedings, made marriage voluntary, set a minimum legal age for marriage (15 years for women and 18 years for men), and assured women a legal status almost equal to that of men concerning the custody of children and the inheritance and ownership of property.

A series of laws followed over the next 10 years, reinforcing the goal of the Personal Status Code to improve the condition of women (see also Appendix A, a time line of significant events). In 1961 the Government of Tunisia legalized the importation, sale, and distribution of contraceptives and repealed a prohibition on these products imposed by the Government of France in 1920. In 1964 the Government raised the minimum legal age of marriage to 17 for women and to 20 for men and commenced family planning pilot projects. In another first among Muslim and African states, Tunisia became the fifth country worldwide to adopt an official family planning policy as a specific means of fostering socioeconomic development. One year later, the Government of Tunisia legalized abortion in the first trimester, if the mother has five living children. The national family planning program was officially established in 1966. In the same year, the Government guaranteed Tunisian women an equal right to employment and made it illegal to employ children under 15 years of age in industry. In 1973 abortion

was declared legal even for "social reasons" and without the husband's consent (Beaujot and Bchir 1984).

An important element in the effort to change traditional attitudes, values, and ways of thinking was modern education. From the time of Tunisia's independence, Bourguiba and his Government made education the leading national budget priority in order to expand and improve the school system and to increase female enrollments at all levels. This commitment to education continued throughout the 1970s and 1980s. Education allocations, as percentages of total Government budgets, averaged 20 percent in 1966-1973 and 15 percent in 1974-1991. In comparison, health allocations for 1966-1991 averaged 7 percent (statistics supplied by the Ministry of Rural Development and Planning).

By the 1980s the gender gap in education had narrowed. Between 1965 and 1989, female enrollments increased from 52 females for every 100 males to 83 females per 100 males at the primary level and from 37 females for every 100 males to 75 females per 100 males at the secondary level. Generally, females constituted 40 percent of total students at all levels of the Tunisian education system, including university. Despite these achievements, however, the level of female education was still comparatively low. In 1988, 57 percent of the Demographic and Health Survey (DHS) sample of females had no schooling. In 1985 the literacy rates were 41 percent and 68 percent for females and males, respectively (World Bank 1991). By 1990 the female literacy rate was still only 56 percent but was double the percentage of the preceding generation.

Health investments have yielded some important returns. The infant mortality rate fell from 200 deaths per 1,000 live births in 1956 to 48 deaths per 1,000 live births in 1990. But disparities remained in the early 1990s, with the infant mortality rate in rural central and southern Tunisia twice as high as in Tunis. (In 1989 the national average was 51.6 deaths per 1,000 live births; the average for urban populations was 32.2 and for rural populations, 68.5 [World Bank 1991]).

Two important factors that have allowed social reform (and with it family planning) to progress steadily in Tunisia over the past quarter of a century have been the relative strength of the economy, especially in the 1970s, and the generally moderate character of Islam practiced by the population.

Although modestly endowed with natural resources, Tunisia has achieved one of the highest levels of gross national product per capita on the African continent ($1,440 in 1990)—without incurring excessive debt. Prudent macroeconomic management has been a principal factor in this achievement, coupled with the growth of the export sector, including receipts from tourism.

However, after a decade of strong growth, the economy began to experience difficulties in the 1980s, and by 1985 a balance-of-payments crisis was imminent (World Bank 1991).

Although most Tunisians belong to one of the most liberal schools of Islam, fundamentalists began in the 1970s to react to tourism and other "Western" incursions. The fundamentalists have not, however, opposed modernization per se, so much as they have opposed its identification with Westernization and the alleged decline of moral values. Women who are associated with the Islamist opposition continue, for the most part, to support the laws that promote their rights. Neither they nor other fundamentalist leaders have advocated the repeal of the family planning program, which has built a broad base of support among the entire society.

In assessing the chances of success of a major undertaking in family planning, the planners of A.I.D.'s first bilateral program in 1968 considered the broad-based commitment of the Bourguiba Government in addition to certain other factors of greater or lesser importance. These other factors included Tunisia's good road network and comparatively flat terrain, and the Government's success in forming the beginnings of a family planning program (undertaken in 1964 as a pilot program) in a way compatible with the leading interpretations of Islam in Tunisia. "Few African countries," A.I.D. planners concluded, "offer such promising conditions for the implementation of a family planning program as does Tunisia," (A.I.D. 1968). A.I.D's 1968 effort marked the beginning of more than two decades of uninterrupted Tunisia/U.S. cooperation in family planning.

3. THE TUNISIA FAMILY PLANNING PROGRAM AND A.I.D. ASSISTANCE

Overview

Key elements of the Tunisia family planning program included an emphasis on highly effective modern methods, decentralized management, diversified modes of service delivery, high quality of care, a home outreach and interpersonal education system staffed with animatrices, institutional capacity for training in service delivery and management, regular analysis of service statistics, and operations research at the regional level. Historically, the program has operated in a positive policy environment, as previously described. Program deficiencies were an underused private sector, insufficient capacity and resources in Tunis to conduct operations research, uneven quality of research conducted to date, public sector control of the contraceptive social marketing program, insufficient access to contraceptives for women in rural areas, and the lack of emphasis on male sterilization.

A.I.D. and the Government of Tunisia entered into the first Project Agreement for family planning in 1968, facing substantial challenges. By January 1968 the Government of Tunisia had established centers for intrauterine device (IUD) insertions in only 10 maternal and child health centers and 14 hospitals nationwide. Ten mobile teams were providing periodic family planning services in roughly 150 villages. There were no professionally trained health educators. And the family planning program was being run by a skeleton staff attached to the Ministry of Health in Tunis, occupying temporary quarters. Moreover, in 1967, there had been approximately 9,500 acceptors of IUDs and 742 female sterilizations; and the number of women who had begun to use the pill was 590 (A.I.D. 1975).

From 1968 to 1980, A.I.D. assistance concentrated on (1) public education, (2) infrastructure development and training, (3) contraceptives, and (4) development of institutional capability in the newly established national Government of Tunisia family planning program. After more than a decade of support in these areas totaling approximately $17 million, there were many achievements:

- Contraceptive prevalence, estimated at 10 percent in 1975, reached 21.3 percent in January 1979.

- The Government of Tunisia had expanded the program's educational and administrative structure into all major provinces.

- Pilot programs were testing various household and community-based distribution systems.

- The National Training Center (NTC) had been operational since 1979.

- The clinical program had expanded to include voluntary female sterilization.

However, despite success in some areas, an A.I.D. evaluation found that there had been a "leveling off of family planning acceptors due primarily to the lack of services in rural Tunisia" (Bernard and Charffedine 1980). A.I.D. planners were very concerned about the direction of the program, and a 1981 A.I.D. memorandum observed that many A.I.D. staff "expressed displeasure that [ONFP] progress in implementing the recommendations of the evaluation had been slow...." (Johnson 1981).

Major problems identified by the evaluation included the following: (1) There had been an overall decline in the use of all methods since 1977. (2) Considerable disparities in contraceptive prevalence existed between urban and rural areas: Three governorates had contraceptive prevalence levels of between 10 and 14.9 percent. (3) ONFP had not moved aggressively to employ private sector opportunities for contraceptive distribution. (4) The ONFP administrative structure, while having made good progress in the 1970s, faced difficulties inherent in any medium-sized bureaucracy, principally the need to strengthen and expedite communications, supervision, and feedback—especially between the center and the regions. (5) A.I.D.'s assistance to the information, education, and communication (IEC) component, despite repeated criticism and evaluations, continued to rely on audiovisual aids and equipment rather than on helping ONFP develop personnel needed for interpersonal communication. (6) The level of training activity had not increased substantially over the 1973 level and most trainees were from Tunis.

Addressing these and other problems, A.I.D concluded in 1981 that the key objectives of A.I.D.'s strategy in the 1980s should be to enhance service delivery and coverage, to increase contraceptive prevalence, and to reduce ONFP's financial dependence on A.I.D. (Johnson 1981).

ONFP's financial dependency had been a concern of A.I.D. officials since 1975. A condition for approval of the 1975 project included a statement by A.I.D.'s Deputy Administrator that steps be taken to close out the project no later than June 1977, since, after 11 years of A.I.D. assistance totaling $6.5 million—not including assistance from the International Development Agency of the World Bank and the United Nations Population Fund (UNFPA)—the Government of Tunisia should be able to manage a family planning program on its own. Subsequent evaluations, however, recommended that assistance be continued, and A.I.D. accepted these recommendations.

To address the objectives outlined above, A.I.D. undertook two projects in the 1980s: (1) a centrally funded project of $9 million between 1982 and 1986 and (2) a bilateral project of $8.3 million, entitled Family Planning and Population Development (1986-1990). These two projects aimed to

- Improve problem solving to help ensure effective use of the Government of Tunisia and donor resources
- Increase access to family planning, especially in rural areas (by funding mobile units, fixed clinics, and outreach to homes through the animatrices in the public sector and the contraceptive social marketing program in the private sector)
- Improve service delivery in highly effective clinical methods, especially female sterilization and IUDs, to increase contraceptive prevalence
- Increase the capacity of Tunisian training institutions
- Produce survey findings about contraceptive knowledge and practices

A.I.D. provided training, technical assistance, and commodities (mostly contraceptives). It helped to build the kinds of capacities that research shows are critical for increasing contraceptive prevalence: the capacity to increase the availability of and access to highly effective, modern methods; the capacity to implement outreach programs; and the capacity to provide education and counseling (Ross et al. 1988; National Research Council 1986).

Program Components

Management, Planning, and Administration

In the late 1970s, recognizing that services had to be supplied more effectively to a widely dispersed rural population and that family planning managers in rural areas needed sufficient authority and resources to solve operational and technical problems, ONFP began to emphasize decentralized management and continued such initiatives throughout the 1980s.

First, ONFP invested heavily in setting up a regional service delivery infrastructure. To extend family planning nationwide, ONFP established a Regional Center for Education and Family Planning (Centre Régional d'Education et du Planning Familial [CREPF]) in the headquarters of each of the 23 governorates (average population 350,000). These comprehensive service centers, headed and managed by a "regional delegate," supplied a full range of services, including sterilization and abortion. Although ONFP provided abortion services, it did not consider abortion to be a family planning method.

Second, ONFP staffed key positions, especially the position of regional delegate, with highly professional, well-trained, and committed personnel. Key informant interviews with regional delegates and staff showed they understood state-of-the-art issues in family planning, oriented their management activities toward problem solving, and monitored the performance of their governorates according to a variety of health and family planning indicators (as suggested by the numerous graphs and charts on their walls, many of which they or their staffs had prepared).

Third, ONFP attempted to give the delegates genuine authority to manage regional budgets. The delegates also assumed responsibility for defending the budget before ONFP management in Tunis. All regional delegates interviewed by the team spoke very positively of these changes, explaining how managing the budget helped them solve problems quickly and improve the quality of services by permitting more efficient deployment of human and capital resources. Moreover, they were more motivated, feeling an enhanced sense of ownership of the program.

A.I.D. oriented its assistance throughout the 1980s to support a key ONFP decision to decentralize management decision-making and strengthen local managers' capability for solving problems. In 1982 ONFP adopted training in diagnosis, planning, and evaluation—essentially a management approach to identify problems and solutions related to all aspects of the program. A.I.D. fully endorsed this approach. Initially, the A.I.D. Program for International Training in

Health (INTRAH) conducted workshops to increase management efficiency and improve program performance. Even at this early stage, INTRAH and ONFP designed evaluation forms to measure the impact of training on program performance (Lécomte et al. 1984). To strengthen the diagnosis, planning, and evaluation approach, A.I.D. asked RONCO consulting firm and the Training Resources Group (TRG) to conduct management training for senior and mid-level managers. Staff in the regions and in Tunis felt these workshops contributed to their effectiveness in delegating authority, planning as a team, developing organizational methods, conducting evaluations, using feedback, and leading.

Services and Service Delivery

ONFP has used both public and private service delivery mechanisms. For service delivery through the public sector, ONFP established a three-tiered outreach program targeting rural and urban areas. It included (1) CREPFs and family planning centers, (2) fixed centers, and (3) mobile units of clinics and teams, which were first introduced in the 1960s. When data showed considerable rural/urban disparities in contraceptive prevalence in the late 1970s, ONFP strengthened rural outreach by increasing the numbers and capabilities of the mobile units. The main types of services delivered through the public sector and methods available in the country are described in Appendix B.

ONFP also distributes pills and condoms through private commercial channels. It retains some control over the private sector because the distribution system requires that all contraceptives pass through a central ONFP warehouse. However, much remains to be done to exploit the underused private sector. Over three-fourths of all current contraceptive users obtain their supplies from public sector outlets; other users rely on pharmacies or private physicians and nurse-midwives (Aloui, Ayad, and Fourati 1989; cited by Ayad, Sayed, and Way n.d.).

The Tunisia family planning program offers virtually all methods of contraception, both clinical and nonclinical. However, because a high percentage of couples will experience failure unless a very effective method (defined as low-failure) is used, ONFP emphasizes highly effective, modern methods; in particular, the IUD and voluntary female sterilization. In the late 1970s, sterilization was one of the least used methods (A.I.D. 1977). Moreover, many in ONFP were convinced that the IUD was the best temporary method for rural areas (better continuation, no discipline required on the part of the user, no need for resupply, and well suited to a delivery system centered on the midwife). Today, the IUD and female sterilization, along with the pill, account for the bulk of the contraceptive prevalence in Tunisia. The IUD accounts for 17 percent of prevalence, tubal ligations for 12 percent, and pills for 9 percent (Aloui, Ayad, and Fourati 1989).

Public sector facilities are either staffed with or visited by animatrices who

are responsible for a home visiting outreach system discussed below. There has been almost no effort to provide male sterilizations through the public sector program. The focus groups provided information on the prevailing myths and concerns about this method (see Appendix C).

Between 1978 and 1988, A.I.D. assistance was directly targeted (1) to improve service delivery of effective, modern methods (e.g., female sterilization and IUDs) and (2) to diversify service delivery modes.

To help ONFP provide effective, modern methods, A.I.D.'s Office of Population contracted with specialized organizations (or "cooperating agencies") (see Appendix D). Between 1982 and 1986 A.I.D. provided $9 million through these agencies (Lécomte et al. 1984), which was approximately 20 percent of total A.I.D. funding for the 1968-1990 period. Service delivery capabilities were upgraded, especially for surgical contraception and IUDs. The record shows that a large increase in contraceptive prevalence occurred between 1978 and 1988, from 31.4 percent to 49.8 percent. Moreover, acceptance of IUDs and female sterilization accounted for the largest increases as discussed below.

To help diversify modes of service delivery, A.I.D. channeled $3 million (of the total $9 million) provided through the Population Council during this same period to strengthen outreach through mobile units and animatrices. (The third way in which A.I.D. helped diversify service delivery modes was by funding the contraceptive social marketing [CSM] program. This approach and the results of work with animatrices are discussed in succeeding sections of this report.)

Major achievements in service delivery of clinical methods and in the use of mobile units as an important mode of service delivery include the following:

- *Female sterilization.* In the late 1970s, female sterilization was the second least used method after spermicides (A.I.D. 1977). For example, the incidence of sterilization per 100 married women was 9, while the incidences of abortion and IUDs were 21 and 29, respectively. In 1977 A.I.D. helped establish the Ariana Clinic for training in surgical contraception and introduce what was then a revolutionary surgical technique—laparoscopy. Over the next 9 years, A.I.D. gave more than $5 million to the Association for Voluntary Surgical Contraception (AVSC) and the Johns Hopkins Program for International Education in Gynecology and Obstetrics (JHPIEGO) for physician and anesthesiologist training. Since 1974 almost one-half (65,000) of the 150,000 female sterilizations were performed with AVSC funding (AVSC 1992). By 1988 female sterilization was the second most used method and accounted for 25 percent of the increase in prevalence between 1978 and 1988 (Ayad, Sayed, and Way n.d.).

- *Training in and provision of IUDs.* Funding provided to INTRAH and JHPIEGO to train midwives, physicians, and trainers in IUD insertion in the late 1970s and 1980s was an important contribution to the increase in prevalence. In 1988 IUDs were the most used method. Increased use of IUDs accounted for over 45 percent of the increase in prevalence between 1978 and 1988 (Ayad, Sayed, and Way n.d.).

- *Mobile units.* To expand rural outreach and access, A.I.D. provided to the Population Council funding as early as 1968 under the first bilateral project and later in the amount of $3.9 million (1981-1987) to strengthen the mobile units, which numbered 61 by 1984 (Lécomte et al. 1984). By 1985 the number of new acceptors reached through mobile units had increased by 54 percent over the 1982 figure, and mobile units were producing one-third of the output of the entire family planning program. In some governorates, mobile units contributed as much as 74 percent of program output (Coeytaux et al. 1989).

Evaluation and Operations Research

ONFP maintains an effective system for collecting and analyzing service statistics, which provides information on annual performance at the national and regional levels. By the late 1980s, ONFP had presented performance results for each governate in the *Rapport Annuel: Statistiques des Activites de Planning Familial.* The report for 1989 (ONFP 1989) provides evidence of a comprehensive analysis of service statistics showing that ONFP exceeded its goals in every category except sterilizations: first-time IUD insertions surpassed the goal by 5.04 percent; net IUD insertions (i.e., insertions minus expulsions and removals) exceeded the goal by 7.27 percent; new pill acceptors, by 26.21 percent; and secondary methods, by 16.19 percent. Sterilizations fell short of the goal by 15.26 percent as did abortions by 9.35 percent. The team was informed that the reports for 1990 and 1991 were incomplete. The reasons for the delay were not specified.

In addition, discussions with key informants in the governorates of Mahdia, Zaghouan, Sfax, Kasserine, and Siliana uncovered evidence of regional capabilities to conduct and use operations research to improve program performance. In 1991, for example, the Mahdia staff selected operations research topics to address important questions related to problem solving and performance, such as, Why do clients remove IUDs? Do clients who have had abortions use effective contraceptives? What are clients' views on the quality of care at CREPF? Some of the regional staff emphasized that they undertake "no-budget" operations research—they conduct all studies themselves because they do not have resources to fund outsiders to do the research. One regional delegate observed that research

topics are identified when staff members see a problem: "We want to know why....The response to the 'why' is the operations research."

In the late 1970s and in the 1980s, A.I.D. supported three major surveys and seven major operations research studies at ONFP headquarters in Tunis.[1] The studies were funded under the Tunisia Family Planning and Population Project (1987-1990). The three surveys, Tunisian Fertility Survey (1978), Tunisian Contraceptive Prevalence Survey (1983), and Demographic and Health Survey [DHS] (1988), supplied information on fertility, family planning, infant and child mortality, and maternal and child health care. ONFP felt that these surveys are what provided the information it needed—especially in the early years of the program—to improve program performance; this information contributed to the subsequent design of improved outreach capability. In addition, in conducting the surveys ONFP expanded its demographic research capacity.

Without assistance from A.I.D., much less research would have been undertaken. However, given the dependency on A.I.D. financing for research, future activity is uncertain. Research staff indicated that their ability to produce future studies will be limited, given likely reductions in research funding. In his end-of-project status report on A.I.D.-supported research activities undertaken from 1985-1989, Thorne (1990) cited several lessons learned: (1) the research agenda was overly ambitious, (2) a long-term resident technical advisor would have been more useful to ensure steady progress on the research activities, and (3) although the ONFP service statistics system is better than many, it has not been possible to use the system for tracking acceptors over time. Furthermore, it appears that the quality of the studies has been uneven and the team could not easily document instances in which research findings had been used to influence program strategy and management, suggesting insufficient attention to the relevance and utilization of research.

In-country Training Capacity

ONFP has built up the capacity for training its staff in family planning. It now can provide management, clinical, and in-service training, and is on the verge of institutionalizing preservice training in the country's schools of medicine, social work, and nursing.

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[1]The team made a distinction between ONFP's system of collecting and analyzing service statistics, which the team and many observers believe is very good, and ONFP headquarters' capacity to conduct operations research studies. In this section we focus on the latter.

Each component of A.I.D. assistance featured training, addressing specific skills and knowledge needs in administration, services, IEC, and research. Between 1985 and 1988, A.I.D. financed training for 1,163 ONFP staff at slightly less than one-third (29 percent) of the centers that offered family planning services continuously during this time. An important aim of A.I.D.'s training effort was to institutionalize a capacity for training either in ONFP or in other centers. Important themes in A.I.D.'s assistance for training are noted below.

Emphasis on medical and clinical training 1979-1982. A.I.D./Tunisia's 1979 project evaluation (Maguire, Johnson, and Bernard 1979) found that the scarcity of obstetricians and midwives, especially in rural areas, was the factor most limiting to the success of the family planning program, given the growing importance of IUDs and female sterilizations. A.I.D. began providing training in clinical methods and helped establish the Ariana Clinic for training in surgical contraception techniques and the National Training Center (NTC). NTC now offers training for service providers as well as for education and management staff. Because it also provides international training, NTC has the potential to contribute to cost recovery and sustainability of the family planning program in Tunisia. The total number of people trained in family planning techniques during the 1979-1982 period grew from 663 to 1,512, with particular emphasis on paramedical personnel (midwives and male and female nurses).

Beginning of needs-based training 1981. A 1981 joint needs assessment recommended that the emphasis in training shift from imparting general information about family planning to identifying specific training needs, especially in the rural areas, and ways to address those needs. Subsequent needs-based training was carried out principally by INTRAH through A.I.D.'s Family Planning Training for Paramedical, Auxiliary, and Community Personnel project and was aimed at outreach to rural and disadvantaged areas.

Modules for preservice training and training in management 1985-1990. In the final phase of A.I.D.'s program, RONCO helped develop 15 modules for preservice training in Tunisia's 3 medical schools, 3 midwifery schools, 22 nurses' training schools, and the school of social work (for the animatrices). RONCO also established a management training program in diagnosis, planning, and evaluation to help ONFP identify service delivery problems in the regions. Largely as a result of these two efforts in management and preservice training, training flourished in ONFP during the latter part of the 1980s. The number of personnel trained increased from a low of 126 in 1984 to 974 in 1988 and 748 in the last year, 1990. Appendix E discusses A.I.D.'s training assistance in greater detail.

Information, Education, and Communication

Since the 1970s the work of the animatrices has been central to ONFP's education efforts in the rural areas. Full-time social workers recruited from local communities, animatrices received 3 weeks of training in contraceptive technology, counseling techniques, and record keeping and were then employed to make regular home visits to inform women of the schedule of the mobile clinics and to keep records of women's appointments and reproductive history. They used educational materials produced by the audiovisual unit to help educate women. In addition, the animatrices worked in the clinics and other supply points to provide information and counseling. The team confirmed the importance of home visits; in every clinic or dispensary visited, the animatrices showed the team the schedule and followup results for home visits.

ONFP has been a pioneer in the use of television in Tunisia for public service advertising, with mass media campaigns a major strategy. However, because the media campaigns were conducted in 1988 and 1989, they could not be considered major factors in the increase in contraceptive prevalence from the late 1970s to 1990, the relevant time period for this report (see also Appendix F).

A.I.D.'s support for the outreach and interpersonal communication component of IEC was most intense in the l982-1986 period. Delivered largely through the Population Council, the assistance of approximately $1.2 million (A.I.D. 1982) for IEC contributed to an increase in the animatrice workforce and coincided with an explosion in rural service delivery. For example, the annual number of individual contacts between animatrices and clients rose from 28,000 to 97,000 between 1981 and 1983. In addition to the actual training of animatrices and educators, A.I.D. supported them by paying for motorbicycles, information brochures for illiterate women, and forms for recording monthly statistics and followup activities (Lécomte et al. 1984).

The effectiveness of the animatrices was reported by an A.I.D.-funded study undertaken in 1987 (Coeytaux, Kilani, and McEvoy). The study showed that in a rural governorate with very low prevalence, adding an outreach IEC component (animatrices) to service centers increased the number of new acceptors

by 125 percent—over twice as large as the increase registered in the control region.[2]

Until the mid-1980s, the program relied more on interpersonal communication than on mass media. Beginning in 1986, however, A.I.D. became the sole donor for mass media campaigns conducted in 1988 and 1989. (These campaigns are discussed in greater detail in Appendix F.)

Contraceptive Social Marketing

There were numerous organizational and personnel constraints to developing an effective social marketing program. These included ONFP's lack of experience with market research; the need to coordinate three ONFP divisions for program implementation (research, communications, and medical services) because the Government did not want a separate CSM program; the Government's preference for heavy subsidization of contraceptives; prohibitions on brand advertising of contraceptives without the Ministry of Health's approval; and the unwillingness of the Government to experiment with privatization.

Although ONFP had been distributing contraceptives through commercial channels for years, it was not until 1986 that the Government of Tunisia, with A.I.D. support, established a social marketing program within ONFP Communications Directorate. Thus, U.S. assistance was provided to support a CSM effort administered by and through a public sector program. ONFP staff stocked and shipped 3 brands of pills, 1 brand of condom, and IUDs to about 50 pharmacy wholesalers around the country. The wholesalers in turn sold to over 1,000

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[2]Although the study did not report on the effectiveness of the animatrices nationwide, it did provide detailed information on effectiveness in rural areas. The study took place in the governorate of Mahdia, which in 1980 had a prevalence level of 13.4 percent. The study sought to answer two questions: (1) Which strategy would increase the use of family planning services—augmenting the number of existing sites or supplementing existing services with outreach IEC services? (2) How much better could a mobile team perform if it included an animatrice? The three experimental regions were Bou Merdez (IEC only), El Djem (new service centers only), and the West (IEC and new service centers). The control region was called the East. Services in this region were left unchanged. The analysis showed that the greatest increases in the number of new acceptors were found in the two regions where IEC was implemented, Bou Merdez and the West. Bou Merdez showed a 125 percent increase, over twice as large as the increase registered in the East. The West registered a 295 percent increase, a fivefold increase over the East. El Djem, where a service center had been added, showed an increase of only 8 percent more acceptors than in the East.

pharmacies, which by 1992 were providing fairly good coverage of the country.

Data on the distribution of pills were available for 1975 to 1990, condoms and creams, for 1983 to 1990, and the IUD, for 1988 to 1990 only. ONFP had no statistics on the number of acceptors or users of methods in the private sector. Fortunately, three national surveys provide some statistics concerning prevalence by source and method.

Although the program improved access to contraceptives by increasing the number of supply points throughout the country, it limited its contribution to contraceptive prevalence by waiting until 1986 to establish a full-fledged social marketing program and then situating it in the public sector.

The team raised questions concerning the program's contribution to financial sustainability. At 1992 exchange rates (0.9 Tunisian dinars = $1), three cycles of pills sold for $1.33, four condoms for $0.22, and an IUD for $5.55. Thirty-two percent of the retail price was the margin allowed to pharmacists, and 10 percent of the wholesaler price was allowed to the wholesaler. The President Director General believed that these margins, which were the same allowed for other pharmaceutical products, provided sufficient incentive to ensure adequate promotion. ONFP earned about 60 percent of the retail price. These revenues went into a general ONFP account, rather than specifically into a social marketing account. Sustainability concerns would argue for a price increase and for revenues to be plowed directly back into the program.

The CSM program contributed less to impact than other program components because by starting late (1988) only 37 percent of pill users and 44 percent of condom users obtained their supplies from pharmacies (Aloui, Ayad, and Fourati 1989); CSM distribution of IUDs beginning in 1987 was at one-tenth of the distribution of the total public sector; and condoms proved unpopular, making a minor contribution to prevalence. A substantial program deficiency was lack of information about sales to consumers; trend data on actual consumer sales are critical to successful management of any CSM program. A.I.D. might have made a greater contribution to the CSM program had it worked with ONFP to devise a system for collecting data on such sales. At the time of the team's visit, ONFP data showed distribution of contraceptives from ONFP warehouses to pharmacies, not pharmacy sales to individual consumers, the number of actual acceptors being unknown.

4. PROGRAM PERFORMANCE

Effectiveness

Indicators of Program Effectiveness (Use, Access, Coverage)

CDIE evaluations examine the extent to which program services, technical packages, or other products are available to the target audience; whether equity in access to the program exists; and whether coverage of intended beneficiaries is as planned.

Acceptors. Total acceptors in the public sector program increased steadily up to 1989, to 141,918, but declined to 138,087 in 1990 and to 131,571 in 1991. Specifically, acceptors of pills and female sterilization dropped, while IUDs essentially plateaued from 1988 (see Table 1). Sterilizations dropped from 14,132 in 1987 to 8,767 in 1991. Pills reached a high in 1989 of nearly 31,000, falling off to 26,597 in 1991. Other than spermicides and male sterilization, for which acceptor levels were so low they were not reported, condoms proved to be the least preferred method.

Coverage. Trend data presented in Figure 1 show that between 1983 and 1989, coverage increased, with greater numbers of mobile centers, of CREPFS, and of fixed centers.

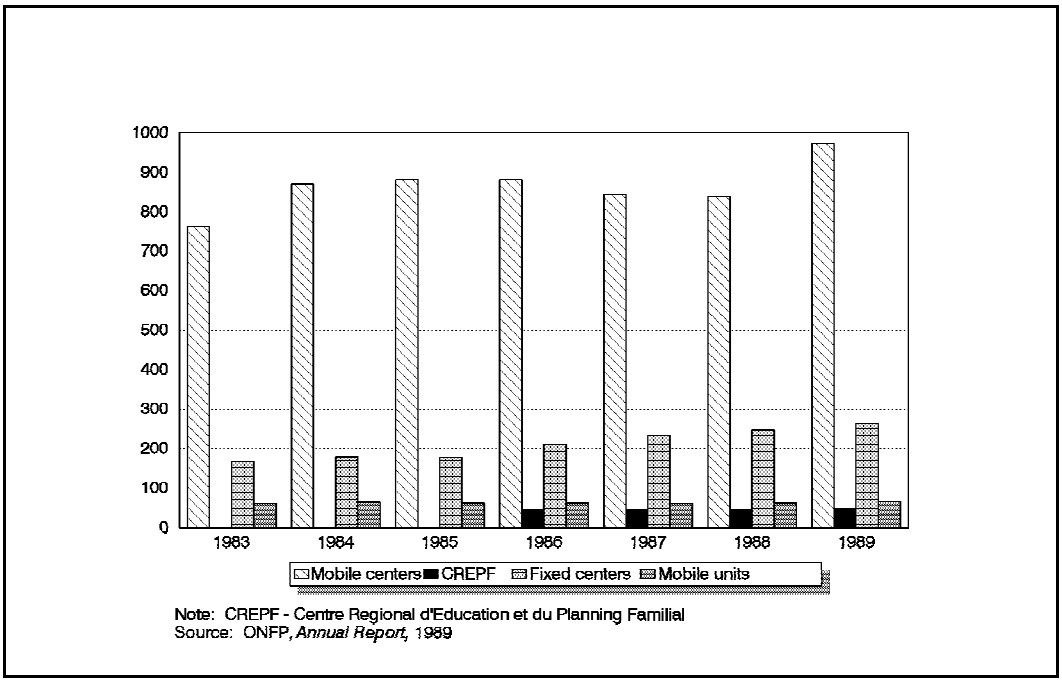
Accessibility. With respect to access, the Tunisian Contraceptive Prevalence Survey (Ayad and Zoglami 1985) provided data on how accessibility differed between urban and rural women and among regions. (Note: almost 60 percent of the population lived in urban areas at the last demographic survey [Aloui, Ayad, and Fourati 1989]). Ready and easy access is frequently interpret-

Table 1. Acceptors in the Public Sector, by Method, 1964-1991

Year	IUD	Pill	Condom	Spermicides	Tubal Ligation	Total
1964	1,154				293	1,447
1965	12,832	343			384	13,559
1966	12,077	350			766	13,193
1967	9,657	591			742	10,990
1968	9,304	4,780			1,627	15,711
1969	8,696	7,867			2,513	19,076
1970	9,638	9,959			2,539	22,136
1971	12,381	11,778			2,280	26,439
1972	13,250	12,026			2,459	27,735
1973	16,790	11,194	8,407	4,237	4,964	45,592
1974	19,084	10,795	7,432	3,683	10,575	51,569
1975	17,307	16,310	8,678	4,426	9,896	56,617
1976	20,830	25,987	11,385	5,100	8,269	71,571
1977	23,879	27,567	13,125	5,727	7,987	78,285
1978	26,273	27,017	12,304	4,674	8,832	79,100
1979	25,755	23,698	10,442	4,736	8,141	72,772
1980	31,792	21,768	9,938	6,517	8,460	78,475
1981	40,597	20,137	9,694	5,968	8,719	85,115
1982	40,400	18,707	8,613	3,384	9,564	80,668
1983	43,234	18,073	7,842	8,285	9,319	86,753
1984	46,005	19,919	9,168	12,887	9,315	97,294
1985	50,699	21,550	11,368	16,579	9,638	109,834
1986	54,891	22,386	13,863	10,513	10,394	112,047
1987	61,641	27,028	14,975	8,336	14,132	126,112
1988	67,958	28,731	15,196	13,542	13,043	138,470
1989	68,677	30,990	17,710	13,488	11,053	141,918
1990	66,670	27,168	19,187	15,330	9,732	138,087
1991	68,767	26,597	19,168	8,272	8,767	131,571

Source: ONFP Annual Report, 1989, ONFP, Div. of Statistics, 1992.

Figure 1. Family Planning Program Infrastructure Tunisia, 1983-1989



ed as meaning that a couple spends no more than an average of 2 hours per month to obtain contraceptive supplies and services (see Table 2). Among urban women, 77 percent perceived access to contraceptive sources as "easy," compared with 51 percent of rural women. Urban women incurred about half the average travel time of rural women gaining access to contraceptive sources for all methods; for almost 50 percent of urban women, the travel time to the source was less than 30 minutes versus more than an hour of travel time for 72 percent of rural women. The Tunis and South regions had shorter travel times to contraceptive sources than the other four, more rural, regions. Cochrane and Guilkey (1991) point out that despite the considerable effort to improve access of the rural poor to family planning, these groups were still underserved compared with the economically better off, revealed by the fact that uneducated women had on average one child more than they said they wanted.

Easy access also implies relatively low costs. Because family planning services were free at public sector clinics and CREPFs, all publicly obtained contraceptives and services would be considered in the easy access range (Lécomte et al. 1984).

Table 2. Perception of Accessibility

Perception	Residence		Region						Total
	Urban	Rural	Tunis	NE	NW	Central	Sahel	South	
Time to source (minutes)									
0-14	21.6	2.8	30.4	7.0	8.7	7.3	11.8	13.8	14.8
15-29	26.3	7.7	21.6	13.6	15.5	17.1	20.8	31.0	19.5
30-59	27.7	17.5	29.2	18.4	19.4	9.8	27.5	27.6	24.0
60-119	18.4	41.1	13.5	35.2	33.0	36.6	30.3	17.2	26.6
≥ 120	6.0	30.9	5.3	27.2	23.3	29.3	9.6	10.3	15.1
Average time (minutes)	34.1	71.9	29.7	64.1	59.6	68.4	45.1	39.1	47.8
Median time (minutes)	28.7	60.2	18.9	59.8	58.8	61.1	30.3	28.4	30.2
Average pill	21.0	44.7	13.5	34.2	35.0	57.2	31.2	29.7	28.9
Average IUD	34.9	68.8	30.1	62.1	54.8	66.1	44.1	25.0	45.4
Average Female Sterilization	47.6	84.3	46.8	86.0	76.4	79.6	57.8	56.0	65.7
Transportation									
Foot	55.6	22.4	56.2	37.3	38.5	27.7	41.5	41.3	42.9
Other	43.7	76.2	42.1	61.3	60.6	72.3	58.5	57.1	56.1
Perception									
Difficult	21.2	42.0	11.8	30.3	46.8	29.8	36.9	20.6	29.2
Easy	76.8	50.9	87.1	61.3	48.6	70.2	59.0	76.2	66.9

Source: Lécomte et al. 1984.

There was an increase in the use of contraception among all educational groups, which also suggests increasing equity in access (which is discussed later in the section on demographic impact and illustrated there in Table 9). Between 1978 and 1988, the percentage of currently married women (ages 15-49) using modern methods (IUD, female sterilization, and pills) increased from 22 percent to 35 percent among women with no education, from 26 percent to 43 percent among women with from 4 to 6 years of education, and from 22 percent to 42 percent among women with more than 10 years of education.

Finally, poor and uneducated women had access to sterilization services. Survey data showed that 75 percent of women who accepted voluntary sterilization were illiterate and that their socioeconomic conditions were lower than the national average. Only 9.6 percent received an income through outside employment.

Continuation rates. ONFP conducted two studies of continuation rates among pills and IUD users, one in 1973 and another in 1989. The annual one-method continuation rate for IUDs had increased to 77 percent in 1989. (The one-method continuation rate measures the rate at which users of a method continue to use that method from one year to the next until the user discontinues, changes methods, or becomes pregnant). Continuation rates for pills remained basically the same, at 41 percent. The promotion of the most effective modern, but appropriate, method has always been a goal of ONFP. Continuation rates reflect the quality of services.

Lapham-Mauldin Program Effort Scale

CDIE has used the results of 1982 and 1989 applications of the 30-item Lapham-Mauldin Program Effort Scale (L-M Scale) in five of the six countries studied in its impact assessment of family planning to provide another perspective on effectiveness (Mauldin and Ross 1991, see also Appendix G). The ratings were rendered by "knowledgeable observers". The L-M Scale defines "program effort" in terms of four major components: (1) policy and stage-setting activities (8 items); (2) service and service-related activities (13 items); (3) record keeping and evaluation (3 items); and (4) availability and accessibility of fertility control methods (6 items). The score range for each scale item is zero to four, with four indicating a strong policy, much activity, or high performance with respect to that item.

The L-M Scale was applied in 1982 and 1989 to the Tunisia family planning program to produce "program effort" scores (Mauldin and Ross 1991). Tunisia had the second highest program effort score among Muslim countries in 1982 and was one of three Muslim countries to receive a "strong" overall rating

in 1989. Moreover, Tunisia's 1982 and 1989 L-M Scale scores for activities that would improve effectiveness (based on the CDIE definition involving use, access, and coverage) suggest that throughout the 1980s there were general improvements in these three areas, as follows (see table in Appendix G):

- *Use.* Ratings of activities that would improve use—training and mass media—increased from 1982 to 1989, with training rated a perfect 4.00 and mass media a 3.70.

- *Coverage.* The 1989 ratings of many activities that would help increase coverage improved substantially over 1982: import laws and regulations rose from 1.00 to 4.00; involvement of other ministries, from 1.80 to 4.00; involvement of the civil bureaucracy, from 1.50 to 4.00; and logistics and transportation, from 3.00 to 3.40. The rating for involvement of private sector agencies declined because very few nongovernmental organizations participate in family planning.

- *Access.* Ratings for access to most contraceptives were high, with the exception of male sterilization: pills increased from 3.80 to 4.00; IUDs increased from 3.00 to 4.00. Although still highly rated at 3.00 in 1989, female sterilization declined from 3.50 in 1982, possibly reflecting the decline in acceptors after 1987. Use of condoms dropped, and male sterilization remained very low at .10 (no change).

The major conclusion concerning the L-M Scale ratings is that external observers of the program believed ONFP's performance effectiveness improved during the 1980s.

Quality of Care[3]

ONFP managers raised the issue of quality of care in discussions with the team (see also Appendix H). They said that quality of care has been an integral element of the program since the program's inception, increasing in emphasis since the mid-1980s, when a new Director General took charge. The Director General believes that quality concerns are as important as quantitative targets. Moreover, because clinical procedures, such as IUD insertions and female

[3]The team employed a framework developed by the Population Council to examine quality of care. It includes six elements: choice of contraceptive methods, information given to clients, technical competence of the providers, interpersonal relations, mechanisms to encourage continuity of contraceptive use, and convenience and acceptability of services (Bruce 1990).

sterilizations, figure prominently in Tunisia's program, ensuring high quality results (e.g., low infection rates) is doubly important.

The CDIE team concluded that overall the Tunisia family planning program has provided very good quality of care, especially with respect to choice of methods, technical competence of providers, mechanisms to encourage continuity of use of the IUD, convenience and acceptability of services, and provider/client relations. Evidence to support this conclusion comes from key informant interviews with administrators and family planning providers; observations in clinics and other supply points; focus group discussions; data on continuation rates for IUDs (77 percent in 1989)—the most used clinical method provided by the program; and survey results. For example, surveys of women who had undergone sterilizations have indicated that 98 percent of the women felt satisfied with the operation and that the rate of reported complications has been very low (2.5 per 1,000) (AVSC 1992).

The 12 focus group discussions conducted by the team provided insight into the quality of care dimension. Information was gained on a wide range of program and nonprogram factors that positively or negatively affect fertility intentions and, thus, acceptance or rejection of family planning. Factors identified by the focus groups that undermine family planning include widespread myths, rumors, and inaccurate information about methods and side effects; the perception of abortion as a family planning method; the passive role of the man in family planning; and nonacceptance of male sterilization. The major factors identified that enhance the program effort include the perception of the improved health of the mother as a result of family planning, the perception of improved infant health, and the perception of the economic costs of children. The principal insight gained from the focus groups was that myths and misinformation concerning all methods, including male sterilization, worked against adoption and continuation of contraception. Focus group participants (men and women) in all groups expressed fears of family planning ("the IUD circulates throughout the body"; "the IUD causes cancer"). Moreover, many women indicated that the recent mass media campaigns confused them. One focus group discussant said, "One year it's the pill, one year it's the IUD; we don't know what to use." (For more detailed discussion on focus group results, see Appendix C.)

Focus group discussions provided evidence of high rapport between clients and the sage-femmes (the midwives, the principal service providers trained to insert IUDs), a source of advice on issues that went well beyond family planning. Nevertheless, quality of care in some clinics, especially those with a very heavy workload, was deficient in certain areas, especially in client-provider relations.

The major finding of the focus group discussions (that myths and rumors about methods can constrain program effectiveness) has implications for

improving the quality of care. This suggests that as part of ONFP's concern to provide high quality services, an even greater effort is needed in providing correct information to clients, especially through interpersonal communication, since the majority of women had little schooling. The need to transfer accurate information to clients was also reinforced by data on continuation rates for the pill, which were low at 41 percent.

Focus group findings concerning rumors about negative side effects are supported by earlier surveys. One (Beaujot and Bchir 1984) found that "the strongest opposition to family planning [in Tunisia] is based on concerns about the health consequences of contraception." These authors cited other findings that suggested that fear of negative side effects was the principal reason why Tunisian women did not use family planning.

Thus, given pervasive myths and rumors in Tunisian society about negative side effects of family planning, the team confirmed that ONFP's emphasis on quality is important, especially in giving clients correct information. Nevertheless, because 1990 data showed a downturn in acceptors, the team felt that ONFP needs to ensure a balance between quality and quantitative targets.

Status of Women

Research has shown that the status of women affects the use of contraceptives. That is, women whose status has been enhanced through education or employment are more likely than women of lower status to use contraceptives. While researchers have proposed no fewer than 52 indicators of the status of women, CDIE has focused on just 3 for this evaluation: education, labor force participation, and legal status (See Appendix I).

CDIE's analysis of indicators of the status of women leads to the conclusion that education and employment have not made major contributions to advancing the status of the *majority* of Tunisian women over the past two decades. The extent to which the status of Tunisian women is higher than the status of women in other Muslim countries is attributable mostly to important legislative changes that supported women's rights and equality before the law and, probably most important, raised the legal age at marriage. However, changes in the law are less likely to make a real difference in women's lives in countries where women are illiterate, do not know about the law, and cannot take advantage of it. In Tunisia in the 1980s, approximately 60 percent of married women of reproductive age were without schooling (Ayad, Sayed, and Way n.d.). Thus, although the status of women was higher in Tunisia than in other Muslim countries, improvement in women's status was not wholly persuasive in explaining the significant fertility decline in Tunisia over the past decade.

Summary of Findings on Effectiveness

Using CDIE's general approach to measuring effectiveness (use, access, coverage), the data can be summarized as follows. *With respect to use*, data show that the number of acceptors of temporary methods increased steadily between 1980 and 1990; acceptors of female sterilization increased between 1980 and 1987; and continuation rates for the IUD, the most used and promoted program method, was acceptable at 77 percent and reflected good quality of care. However, in 1988, the number of acceptors of female sterilizations declined; in 1990, acceptors of IUDs and pills dropped; and the continuation rate for the pill did not improve over the decade. Condom use was never very great. Moreover, focus groups (see Appendix C) indicated that the program (1) had not addressed adequately the widespread negative myths and rumors concerning side effects of various methods and (2) did not promote male sterilization. These factors also constrained use.

Discussions with AVSC staff suggested the following reasons for the decline in female sterilizations after 1987: (1) ONFP's unwillingness to expand sterilization further to underserved populations and to undertake new initiatives; (2) possible saturation in the North and Central Regions; (3) the unwillingness of physicians to live and work in the South, where there was unmet demand; (4) lack of capacity in some areas to provide sterilization services; and (5) weak supervision.

With respect to access, access of uneducated and poor women improved. Use of modern contraceptives increased between 1978 and 1988 among all groups of women categorized by educational level. Moreover, the largest proportion of women who accepted sterilization was from the least educated and poorest groups, and their use of sterilization increased between 1978 and 1987. This suggests that over the past decade, the program has made important strides in improving equity of access of uneducated women to modern and effective methods. However, urban women still had easier access to contraceptives than did rural women.

Concerning coverage, infrastructure and supply-point data (the latter in both the public and private sector) show that coverage increased steadily in the 1980s.

The team concluded that compared with other years during the period considered by this study (1965-1990), the family planning program was very effective during the 1980s (1) in increasing the use of two highly effective, modern contraceptive methods IUD and female sterilization; (2) in extending the access of poor and uneducated women to modern clinical methods; and (3) in extending coverage. Relative success in these areas suggests that the program's institutional capacity for effectiveness was increasing in many, but not all, areas.

Greater use and effectiveness of the program during these years was inhibited by urban/rural disparities; failure in combating widespread myths concerning all methods, including male sterilization; shortfall in pill continuation rates; and failure to promote male contraceptives. Acceptor rates for condoms were disappointing and acceptance was nonexistent for male sterilization, a "simpler, safer and less expensive" procedure than female sterilization (Hatcher et al. 1989).

Most important, given the decline in female sterilizations in 1988 and of acceptors of IUDs and pills after 1989 and after a decade of steady growth, the team concluded that ONFP was not able to improve or sustain its institutional capacity for effectiveness between 1988 and 1991.

A detailed examination of the factors that accounted for this decline in effectiveness was not possible in the time permitted for this study. However, the termination of A.I.D. bilateral resources in 1990 did not fully explain the decline. From 1986 to 1991, in addition to the $7.2 million bilateral project, A.I.D. provided roughly $2.5 million in central funds to AVSC, the Population Council, and other cooperating agencies to continue to support service delivery. Other donors also provided assistance.

Despite the availability of these resources, it appears that by 1990, ONFP was having difficulty in financing contraceptive commodities, a deficiency that would directly affect contraceptive use. By mid-1990, $1.2 million in A.I.D. support for contraceptive commodities under the project had come to an end (World Bank 1991), and although ONFP had obtained a $300,000 budgetary provision for commodity procurement, this was "insufficient to meet current needs" (Pillsbury, Maguire, et al. 1990). The A.I.D. Project Assistance Completion Report (A.I.D. 1991) suggested that ONFP had not prepared sufficiently to procure contraceptive commodities from other sources: "After two decades of having A.I.D. purchase contraceptives for ONFP, they strongly resisted attempts to wean them from dependence on an outside donor." These findings underscore the critical importance of sustainability strategies.

Organizational, political, and economic factors also affected the Government of Tunisia's and ONFP's capabilities to increase use, access, and coverage. These included (1) the dismantling of ONFP's sponsoring ministry, the Ministry of Women and Social Welfare, in July 1986 and the subsequent shift of ONFP sponsorship back to the Ministry of Public Health; (2) the introduction of major cuts in Government spending in August 1986; (3) the adoption of a Structural Adjustment Program in October 1988; (4) the nomination of a new Director General of ONFP in December 1986; and (5) the removal from office of President Bourguiba in November 1987. According to the A.I.D. Project Assistance Completion Report (A.I.D. 1991), these were the factors that "had the

most direct impact on project implementation" (referring to the 1986-1990 bilateral project).

Efficiency

CDIE defines efficiency as "the results of an intervention in relation to its costs." With respect to the efficiency dimension of the Tunisia family planning program, A.I.D. provided funding and technical support for the two studies of cost effectiveness undertaken thus far by ONFP. The first was conducted in 1985 on the cost effectiveness of the mobile units (clinics and teams); the second, begun during the RONCO era (1990), was still in progress in 1992. Furthermore, given the structure of the ONFP information system, ascertaining the cost effectiveness of the different program elements was difficult at best. However, ONFP has taken action to remedy this situation by implementing an information system called "comptabilité analytique," or cost accounting.

A standard measure of output of a family planning program, used throughout this section, is the couple year of protection (CYP). A CYP is defined in relation to family planning service statistics by the following assumptions. (Note that for purposes of comparability, the definition of CYP used in the 1985 cost-effectiveness study was used for this analysis. However, CYP was calculated for the total output of the Tunisia family planning program and not just for the mobile units, as was done in 1985.)

CYP (IUD)	=	[(insertions + reinsertions) - (expulsions + extractions)] • 2.5 years per CYP
CYP (pill)	=	total pill cycles ÷ 13 pill cycles per CYP
CYP (condom)	=	(new + old condom acceptors) • 25 condoms per visit ÷ 100 condoms per CYP
CYP (spermicides)	=	(new + old acceptors) • 1 tube per visit ÷ 4 tubes per CYP
CYP (tubal ligation)	=	tubal ligations • 9 years protection per tubal ligation

Results From the Cost-effectiveness Studies[4]

In 1985 mobile units were responsible for about one-third of all family planning activities. In 1989 the mobile units accounted for 346,634 visits (or 27.05 percent of the total) and saw 28,751 new acceptors (or 25.4 percent of the total for 1989). Output of the mobile units was measured in terms of (1) total visits, (2) new acceptors, (3) gynecological visits, (4) CYP without tubal ligation, and (5) CYP with tubal ligation. Costs of the mobile units were estimated from the total ONFP budget in 1985. The results are expressed in terms of cost per visit and cost per CYP (Table 3).

In order to determine how these costs compared with the cost per visit and per CYP in other centers, the authors employed the following analysis. Mobile units accounted for approximately 33 percent of the total activity, while the direct cost of these mobile units was 25 percent of the total ONFP budget. Therefore, the cost per activity was approximately the same as the cost per activity in the fixed centers.

Table 3. Per Visit and Per CYP Costs for Mobile Units

	Tunisian Dinars 1985	US$ 1985
Cost per visit	3.699	4.46
Cost per CYP (w/tubal ligations)	13.998	18.66

Finally the authors compared the cost per CYP and per visit of services delivered in a mobile clinic with those delivered by way of a mobile team. Table 4 shows that the mobile teams were slightly less expensive in terms of both the cost per visit and the cost per CYP.

Table 4. Per Visit and Per CYP Costs for Mobile Clinics and Mobile Teams

	Mobile Clinics (in dinars)	Mobile Teams (in dinars)
Cost per visit	5.734	4.213
Cost per CYP (with tubal ligation)	17.331	16.690

[4]Figures cited in this section are from Aloui, Ayad, and Fourati (1989) or Coeytaux et al. (1989).

Recent Estimates of Cost Per CYP

Using service statistics furnished by the Direction d'Etudes et de Planification of ONFP, in combination with information on total expenditures, the team calculated a cost per CYP delivered by the public sector family planning program in Tunisia. These figures should be interpreted with caution as the limited time available and aggregate nature of the expenditure information precluded an effort to express the cost per CYP in terms of economic prices. The figures cited below are therefore a cost per CYP delivered only by the public sector in terms of constant 1986 total expenditures by ONFP and in terms of financial prices.

The costs of the family planning program came from expenditure data on actual expenses by ONFP furnished by the Direction Financière of ONFP. These nominal expenditure data were converted to constant values by a deflator (obtained from the Ministry of Plan and Regional Development) and then used to calculate a cost per unit output measure of the family planning program; that is, a cost per CYP (Table 5). The expenditure data included both recurrent and capital expenses. Finally the cost per CYP in dinars was converted to dollars using year-specific average exchange rates obtained from the *Intelligence Unit Country Profile, 1989-90: Tunisia (The Economist 1990).*

The cost per CYP calculated in Table 4 is probably an underestimate of the true value, for several reasons. First, a fairly large number of Ministry of Health personnel have provided family planning services for ONFP, although ONFP has not had to pay for these services out of its own budget. A similar caveat would apply to some of the Ministry of Health facilities used by ONFP personnel to provide family planning services, such as maternal and child health centers and Rural Health Dispensaries. To the extent that ONFP could use these facilities free of charge, costs of these facilities were lower than they would have been if the Ministry of Health had demanded a lease or if ONFP had to rent the buildings. Additionally, the CYP measured above was the "output" of the public sector; that is the ONFP CREPFs, mobile units, and fixed centers. Actual CYP "produced" in Tunisia would be larger than indicated above, if the distribution of pills and condoms to the private sector were included.

The FamPlan System of Models

Average cost per birth averted. The average cost per birth averted was estimated using FamPlan. (The scenario structure and the results of the FamPlan applications are found in a Tunisia FamPlan supplementary report on file in CDIE). The number of births averted increased rapidly in the first 10 years of the program and then averaged out to an annual rate of increase of about 10 percent.

Table 5. Cost Per Couple Years of Protection

Year	Constant Expenditure (000s, 1986 dinars)	CYPs	Cost/CYP (dinars)	Cost/CYP (US$)
1983	4,796.16	207,473	23.12	34.06
1984	4,780.88	216,561	22.08	28.42
1985	4,673.91	233,917	19.98	23.94
1986	3,500.00	217,573	16.09	20.26
1987	4,491.15	261,138	17.20	20.75
1988	4,842.74	267,336	18.11	21.19
1989	4,449.07	259,173	17.17	18.66
1990	5,163.02	250,721	20.59	22.38
1991	4,514.84	245,019	18.43	20.03

Note: 1 dinar = $1.26, 1986 exchange rate.

The rate of increase had declined to 5 percent by 1990 and to 2 percent by 1991. The cumulative number of births averted from 1966 to 1991, as estimated with the model, was 1,310,595 (see Figures 2 and 3). Births averted were estimated by taking the difference in the annual number of births from two scenarios ("with family planning" and "without family planning") representing different levels of acceptors in the public as well as in the private sector from 1966 to 1991. The average cost per birth averted since 1983 averaged 43 dinars or $45 at the 1991 exchange rate.

Benefit-cost analysis. A partial benefit-cost analysis of sectoral savings and program costs was implemented using the FamPlan models (see Table 6). The benefits did not exceed costs until 1980. However, by 1991, the benefit-cost ratio was 7.1 percent for the highest discount rate of 15 percent and 11.5 percent for the lowest discount rate of 5 percent. The internal rate of return reached almost 40 percent by 1991.

Figure 2. Births Averted, 1966-1991 Tunisia

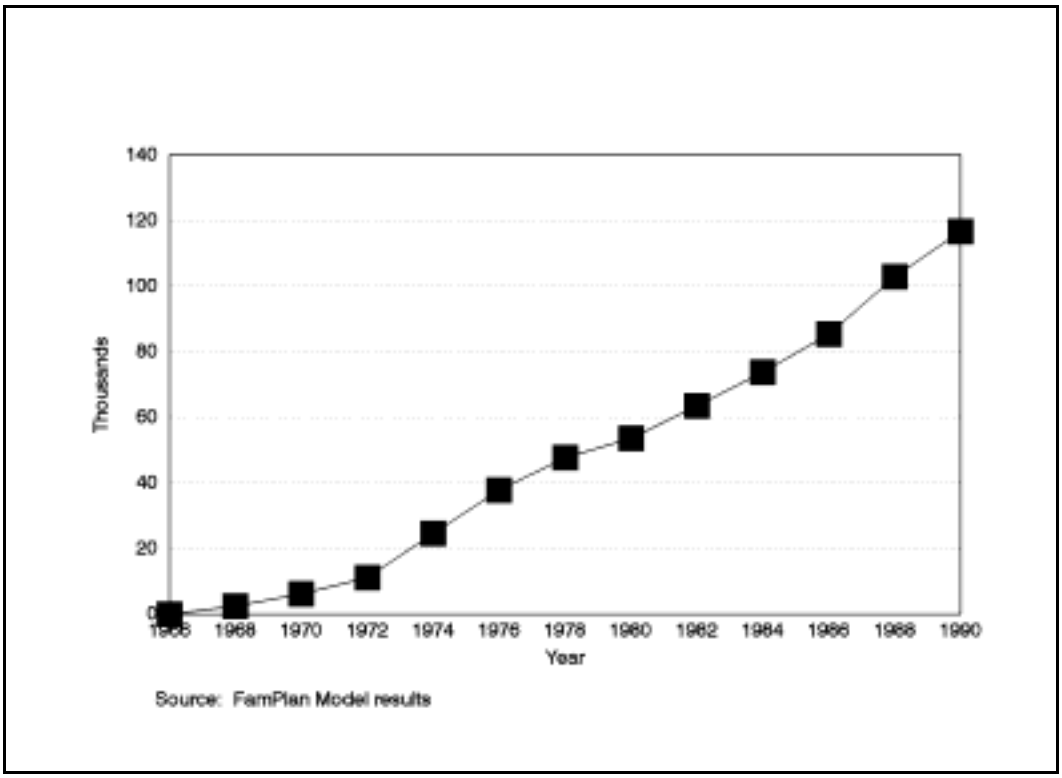


Figure 3. Annual Rate of Increase, Births Averted, Tunisia, 1966-1991

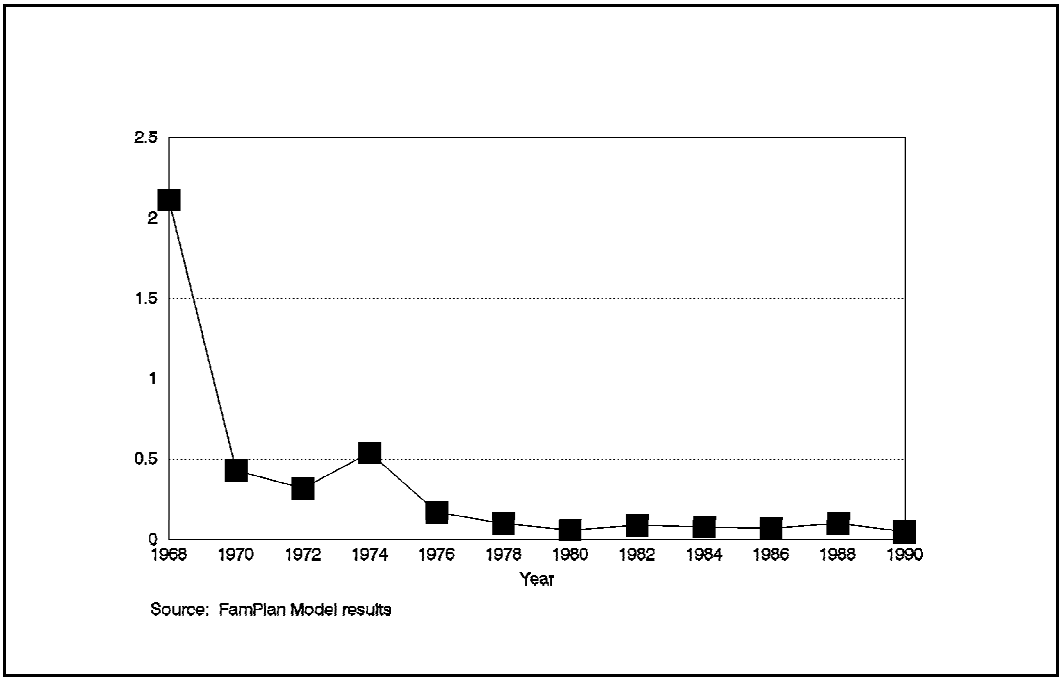


Table 6. FamPlan Analysis

Year	Benefit-Cost Ratios			Internal Rate of Return
	5% Discount Rate	10% Discount Rate	15% Discount Rate	
1966	-0.001	-0.001	-0.001	0.0
1971	0.056	0.053	0.050	0.0
1976	0.338	0.294	0.255	1.0
1981	1.822	1.531	1.253	15.0
1986	5.554	4.586	3.619	33.3
1991	11.528	9.362	7.137	38.7

These findings are not atypical of family planning programs, but in the case of Tunisia the findings should be analyzed in light of two characteristics of the program. During initial program implementation, major capital expenditures are incurred and benefits are not realized until a base of acceptors and users is established. In Tunisia, the amount of capital expenditures was extraordinary, due to the vertical organization of the program; it built and furnished its own centers, had its own vehicles, and—although not strictly a capital expense—hired, paid, and trained its own staff for about the first 20 years. The program was also completely controlled at the national level until the late 1980s. Only comparatively recently has there been pressure to integrate more fully with the public health system, with cost savings resulting from sharing both personnel and infrastructure.

Sustainability

CDIE generally considers sustainability has been achieved when there is "continuation of the benefits and activities of a project or program after donor funding terminates" (or, more narrowly, for 3 years after A.I.D. funding terminates) (A.I.D. 1990). To analyze sustainability, the team employed an analytical framework of contextual factors and project-related factors likely to affect sustainability.

The team concluded that although prospects for the continuation of the program are good because of strong political commitment, the level and scope of benefits (for clients, ONFP staff, and Tunisian society—e.g., education, training, and contraceptive use) appear to have already declined and may continue to decline as the Government struggles to find funds for program components and contraceptive procurement.

Contextual Factors Affecting Sustainability

The economic and political contexts. The economic context is believed to affect sustainability more than any other contextual factor. The A.I.D. Project Assistance Completion Report, 1991, for the final bilateral family planning project identified several economic dimensions that affected project implementation and may hinder future program achievements. These included a change of Government with major cuts in spending (August 1986) and the adoption of a Structural Adjustment Program (October 1988).

As previously discussed, former President Bourguiba changed policies to improve the status of women, creating a strong policy environment and support for family planning. The new President has continued this support; the Government was meeting 73 percent of program costs and nearly 90 percent of overall costs by 1989 (see Pillsbury, Maguire, et al. 1990). Also, in 1990, ONFP obtained significant increases in both the operating budget (19.8 percent) and the investment budget (57.5 percent) at a time of considerable budget austerity (Pillsbury, Maguire, et al. 1990).

Although the 1992 economic situation may limit funding for some components of the family planning program (notably research, IEC, technical and management training, and commodity procurement), it is unlikely that the economic situation will derail the overall program. In fact, the focus groups showed that the cost of living was one of the strongest factors driving demand for family planning services. Moreover, Government leaders are concerned about population growth continuing as unemployment has risen. In sum, although a weaker economy may limit funding, it also drives demand—both by the people and by the politicians—for the purchase of contraceptives, especially through the CSM program.

Strength of the implementing institution. ONFP has enjoyed a good reputation domestically and internationally. The L-M Scale included high scores for items related to institutional strengthening (e.g., civil bureaucracy, training, and logistics and transportation). Nevertheless, key informant interviews with the President Director General and with representatives of bilateral and multilateral funding agencies suggest ONFP will have to struggle to maintain its comparative advantage as it is pushed toward a more institutionally integrated approach. It will have less autonomy as it becomes more dependent on Government allocations.

Program Related Factors Affecting Sustainability

Perceived program effectiveness. A reputation for effectiveness is important for sustainability, and ONFP has such a reputation. A.I.D.-funded

surveys, evaluations, and research document positive program performance for Government policymakers and donors. Especially important are ONFP's good marks in financial management and accounting, which are essential for mobilizing donor support. ONFP has won several international awards, which should encourage the World Bank, UNFPA, and other donors to meet funding deficits after A.I.D. support ends.

Project integration. A.I.D. research (A.I.D. 1990) found that projects designed and implemented as vertically run, separate hierarchies, were less sustainable than those that had been integrated into existing institutions. In many cases, vertical projects fail to build up a wide enough constituency interested in sustaining the project. However, the Tunisian experience is inconsistent with these findings.

In the early 1970s, the Government of Tunisia opted for a vertical approach, more in response to donor pressure than to a deep-seated Government conviction that this was the best way to proceed. Eager to take advantage of Tunisia's favorable policy environment, donors were impatient with the inefficiency of the Ministry of Health and its lack of zeal for family planning. Therefore, ONFP was charged not only with broader population research and programs, but also with family planning service delivery, duplicating to some extent Ministry of Health service delivery infrastructure.

The team concluded that the choice of a vertical organization was justified, given the initial conditions. The 1984 A.I.D. evaluation attributed program success partially to a separate ONFP and recommended maintaining "the integrity and specificity of ONFP services in the cadre of a specific institutional framework." However, the World Bank, A.I.D. (Pillsbury, Maguire, et al. 1990), and other observers suggest that the best course of action to achieve greater efficiency and expand services is integration of ONFP within the Ministry of Health.

Financing. Paying for family planning services will be increasingly difficult because of larger incoming cohorts in less accessible rural areas and with less external aid than before.

Contraceptive supplies are only one element of cost affecting the financial sustainability of the program. (See this report's discussion concerning questions about financial sustainability of CSM). Using projected incoming cohorts (statistics supplied by the Ministry of Rural Development and Planning), a constant 1988 contraceptive prevalence rate and method mix (Aloui, Ayad, and Fourati 1989), and costs to ONFP, the team estimated future required contraceptive supplies and costs from 1991 to 2011 (Table 7). Costs were predicted to almost double between 1991 and 2011, from $1.2 million to $2.1

million. This projection does not account for wastage, for the cost for providing female sterilizations, or for efforts to increase coverage and contraceptive prevalence. Also, the prices used to calculate costs most likely underestimate the real costs to ONFP of providing the contraceptives.

The termination of A.I.D. assistance, which supported the bulk of contraceptives for the program, puts pressure on the Government of Tunisia to make up the difference. The World Bank and UNFPA agreed to partially meet the shortfall. Instituting a cost-recovery program has high priority. Thus for the second time ONFP raised the price of contraceptives distributed in the private sector, increasing the cost for both wholesalers and consumers.

Table 7. Projected Contraceptive Supplies and Costs (at 1991 consumer prices)

	1991	1996	2001	2006	2011
	Total Contraceptive Requirements (000s)				
IUD	87	105	123	140	154
Pill	1,298	1,556	1,825	2,075	2,290
Tubal ligation					
Condom	1,665	1,996	2,341	2,662	2,938
Gel	1,665	1,996	2,341	2,662	2,938
	Cost to ONFP of contraceptives (000s 1991 Dinars)[a]				
IUD[b]	291	349	409	465	513
Pill[b]	381	457	535	609	672
Tubal ligation[b]					
Condom[b]	54	65	76	87	95
Gel[b]	488	586	687	781	862
Total	1,214	1,456	1,707	1,941	2,142

[a]Cost to ONFP equals 60 percent of selling price ($5.55 per IUD, $1.33 per three pill cycles, $0.22 per four condoms).

[b]IUDs, $3.33 per IUD; pills, $0.88 per three cycles; condoms, $0.13 per four condoms; gel, $0.88 per three tubes (assumed same price as pills for lack of appropriate cost information).

Based on the above estimates alone, the team concluded that financing the family planning contraceptive supply program constitutes the severest challenge to overall sustainability of the family planning program.

Training. CDIE's analysis (A.I.D. 1990) indicates that programs with strong training components are more likely to be sustained. Appendix E discusses the considerable extent to which A.I.D. supported various kinds of training for

more than two decades. Contributing to institutional sustainability were emphasis on training of trainers, the establishment of an international center that charged fees for training individuals and groups from other countries, and the preparation of modules for preservice training of doctors, social workers, and nurses (reducing the need for expensive, in-service training). A 1990 report (Echols and Trayfors) confirmed ONFP capability in in-service training, as well as in overseeing preservice training in collaborating institutions.

Yet training did not continue at the same level after A.I.D. funding terminated, and it is therefore an unanswered question whether overall training capability will be sustained. The number of in-service trainees fell from 748 in 1990 to 133 in 1991. This total included 55 foreign participants funded by UNFPA and JHPIEGO. The volume of domestic training performed by the center in 1992 was low, not only because of lack of funds but also because of a decision by the ONFP director to decentralize training to the 23 regional centers and to discontinue the diagnosis, planning, and evaluation approach through interregional teams. ONFP also decided to drop the management training system introduced by the Training Research Group (TRG). An alternative would have been for ONFP to charge other institutions for training in the TRG approach, thus contributing to ONFP's financial sustainability. Further, although ONFP continued the use of RONCO-produced materials for preservice training of midwives, it stopped using RONCO materials for doctors and social workers.

Other areas. Key informant interviews suggested that lower levels of funding would affect the outputs of other program components, including research and IEC. For example, although the team did not obtain data on the current costs of running IEC activities, it is likely IEC will confront problems similar to those facing the training and research divisions. The Communications Directorate, with its three divisions (Information, Education, and Social Marketing) will be able to retain the 139-person staff (17 central, 122 regional) to carry out a heavy schedule. For example, in 1991, there were 208 radio broadcasts; 20 different slogans published in 5 newspapers, initiating a new way to reach remote or impoverished neighborhoods (the multidisciplinary "caravan" approach); and other activities. However, expenses that will be difficult to meet include the costs of producing print and video materials, of filming for television, and of conducting operations research (to determine, for instance, the attitudes of target groups). This could prove to be a critical reduction. For example, the myths and misinformation uncovered through the focus groups underscore the need for a renewed, well-designed IEC strategy.

5. LONG TERM IMPACT

Demographic Impact

Trends in Fertility and Contraceptive Prevalence

Demographic changes in Tunisia in recent decades are particularly well documented. National surveys that produced estimates of fertility and contraceptive use were carried out in 1968-1969 (National Demographic Survey), 1978 (Tunisian Fertility Survey, conducted as part of the World Fertility Survey program), 1983 (Tunisian Contraceptive Prevalence Survey), and 1988 (Tunisian Demographic and Health Survey [DHS]). Population size and distribution has been monitored through national censuses conducted in 1921, 1926, 1931, 1936, 1946, 1956, 1966, 1975, and 1984.

To conduct the analysis in this report, the team relied primarily on estimates that appear in two published sources: the report on the 1988 DHS (Aloui, Ayad, and Fourati 1989) and the United Nations' file of World Contraceptive Use Data (United Nations 1992). As is inevitably the case when more than one source of demographic data is used, there are some discrepancies, mainly because of the United Nations' desire to calibrate its estimates for reference periods that facilitate international comparisons (for example, with years ending in 0 or 5). These discrepancies are minor. Moreover, the Tunisia data are of good quality, relative to other developing countries, and can largely be accepted at face value.

Table 8 summarizes the trends in population size, growth rate, crude birthrate (CBR), total fertility rate (TFR), and infant mortality rate (IMR) from 1960 to 1990 (the most recent figures are extrapolations based on earlier data). During this interval the population nearly doubled. CBR fell monotonically throughout this interval, but the growth rate fluctuated because of off-setting major declines in mortality (and the influence of migration). The annual rate of overall growth declined during the 1980s but is still estimated to exceed 2 percent during the current (1990-1994) interval.

Table 8. Trends in Major Demographic Indicators, 1960-1990

Year[a]	Total Population (millions)	Growth Rate (percent)	CBR	TFR	IMR
1960	4.22	1.85	46.5	7.17	155
1965	4.63	2.04	41.8	6.83	138
1970	5.13	1.81	37.1	6.15	120
1975	5.61	2.58	36.3	5.66	88
1980	6.38	2.57	33.7	4.88	71
1985	7.26	2.38	31.1	4.10	52
1990	8.18	2.08	27.2	3.38	44

Source: United Nations 1992.

[a]For the growth rate, CBR, TFR, and IMR, the reference period is a 5-year interval beginning with the stated year. For example, for these measures, the year "1960" actually refers to the interval 1960-1964. The most recent figures are estimates.

It is reasonable to assume that very little fertility decline preceded 1960, because CBR and TFR for 1960-1964 are close to the maximum values found in any population. The CBR and TFR figures for 1990-1994 are extrapolations from the 1988 DHS, and that survey's estimates for the 3 years from 1985 to 1987 remain the most recent figures that are not extrapolations. Focusing therefore on the trends in TFR from 1960-1964 to 1985-1989, two features stand out. First, the 25-year decline has been very steep. TFR has fallen by an average of about 0.12 of a child, or 2.2 percent, per year, comparable to the declines in Southeast Asia and South America during the same period. Second, the decline has been remarkably steady. There is no evidence of any kind of plateau anywhere in the interval, particularly recently. Between the 1978 and 1988 surveys the average annual decline increased somewhat to about 0.16 of a child, or 3.2 percent, per year. If the trend is extrapolated, either linearly or geometrically, it appears that replacement fertility (TFR of 2.1) will be achieved sometime during the first decade of the 21st century.

During this same interval, contraceptive prevalence, defined as the percentage of all women ages 15-49 who currently use any method of contraception at all, increased from negligible levels in the mid-1960s to 31.4 percent in 1978 and 49.8 percent in 1988. By the 1988 survey, virtually all women knew of at least one contraceptive method. Table 9 gives the percentage distribution of use of specific methods, by currently married women ages 15-49,

drawn from the 1978, 1983, and 1988 surveys. The contraceptive prevalence survey of 1983 is included even though its methodology was somewhat different from that of the two other surveys.

All three surveys show the IUD, female sterilization, and pills to be the main methods. In 1988 the percentages of women using these methods were about 17 percent, 12 percent, and 9 percent, respectively, amounting to about 92 percent of all users of modern methods and 75 percent of all users of modern or traditional methods. Male sterilization was negligible; injectables, condoms, pills, diaphragms, and all other methods were reported by a total of only about 3 percent of the women in 1988. Of particular note is the flat performance of condoms, A.I.D.'s preferred contraceptive in the 1978-1988 period. Traditional methods showed little increase during the decade, rising from about 6 percent to about 9 percent, and the main traditional method was rhythm.

Table 9. Percentage of Currently Married Women Ages 15-49 Using Specific Contraceptive Methods

	1978	1983	1988
Total	31.4	41.1	49.8
Modern methods	25.1	34.2	40.4
Female sterilization	7.5	12.5	11.5
Male sterilization	0.0	0.0	0.0
Pill	6.6	5.3	8.8
Injectables	0.3	0.4	0.8
IUD	8.8	13.2	17.0
Condom	1.3	1.3	1.3
Diaphragm, etc.	0.6	1.5	1.0
Traditional methods	6.3	6.9	9.4
Rhythm	3.8	4.4	6.3
Withdrawal	1.9	1.8	2.4
Abstinence	0.0	0.0	0.0
Other	0.6	0.7	0.7

Source: United Nations 1992.

Between 1978 and 1988, the three main methods of contraception were also the ones that showed the most increase. Prevalence of the IUD increased steadily, nearly doubling during the interval. Female sterilization appears to have increased between 1978 and 1983 and to have remained steady between 1983 and 1988. Pill use increased but to a lesser degree.

Table 10 examines the changes between 1978 and 1988 in the prevalence of the three main methods within five educational categories. It shows that the use of each method is strongly related to education, but the pattern is distinctly different for each method.

The IUD was most popular among the most highly educated women. Its prevalence in 1988 ranged from a low of 13 percent among women with no formal education to a high of 29 percent among those with 10 or more years. The pill seemed to appeal most to the women with a middle range of 4 to 9 years of education. A comparison of the 1978 and 1988 patterns suggests that between these two survey years, the best educated women were specifically attracted away from the pill and toward the IUD. In 1978 the two methods were tied with 11 percent prevalence among women with 10 or more years of schooling; by 1988, among women with the most education, pill use had actually declined and IUD use had more than doubled.

Female sterilization, by contrast, appealed to less educated women. Respondents with no schooling were about three times as likely to adopt sterilization as women with 7 or more years. International comparisons indicate that sterilization often appeals mainly to older women who have exceeded their desired family size, whereas reversible methods appeal mainly to younger and better educated women who are more likely to space their births (for example, see Pullum and Shah 1992). This pattern was observed in Tunisia.

It can be expected that when the younger and better educated women who are contracepting to space births finally reach their desired family sizes, they will tend to turn to sterilization. The negative relationship between sterilization and education currently observed is thus transitional. It is a consequence of both the recent expansion in contraceptive use in Tunisia and the recent improvements in female education, which have reached only the younger women.

Table 10 shows that the combined prevalence of the three main methods (accounting for about 92 percent of all modern contraception in Tunisia) did not have a strong relationship with education. But as the table also shows, strong relationships between education and the separate methods did exist, and the totals particularly mask the different appeal of sterilization and reversible methods.

Proximate determinants. Part of the decline in fertility can be attributed to increased contraceptive use; but other proximate determinants have been changing at the same time and may have had some effect on fertility. The most important of these influences in most developing countries are the amount of time spent in a marital union and the duration of breast-feeding, which affects the resumption of ovulation after a birth.

Table 10. Percentage of Currently Married Women Ages 15-49 Using IUD, Female Sterilization, or Pill, by Educational Level

Method and Years of Schooling Completed	1978	1988
IUD		
0	8	13
1-3	9	16
4-6	13	23
7-9	12	22
10+	11	29
Total	9	17
Female Sterilization		
0	9	15
1-3	11	8
4-6	2	7
7-9	6	5
10+	0	5
Total	8	12
Pill		
0	5	7
1-3	8	8
4-6	11	13
7-9	11	14
10+	11	8
Total	7	8
Total for Three Methods		
0	22	35
1-3	28	32
4-6	26	43
7-9	29	41
10+	22	42
Total	24	37

Source: United Nations 1992.

Estimates of the effects of these other factors in Tunisia were produced for the intervals just before the 1978 and 1988 surveys. The estimates suggest that there was little change in the influence of breast-feeding. However, marital exposure declined substantially mainly because of a rise in age at marriage between the two surveys. A comparative study of 16 countries that conducted both World Fertility Surveys and DHSs showed that Tunisian women marry relatively late in life. For example, of all Tunisian women ages 20 to 24 in 1978, only 29 percent had married before age 20. By 1988 the percentage had fallen to 21 percent, implying even greater postponement of marriage (Adlakha and Suchindran 1985). None of the 16 countries showed more postponement of marriage by the late 1980s than Tunisia.

The trend in Tunisia toward later marriage is responsible for much of the overall decline in Tunisia's fertility since the 1960s and would have reduced TFR even if there were no simultaneous change in contraception. *However, most of the effect of delayed marriage occurred in the early years of the transition.* After fertility has declined to the point where relatively few births occur when the mother is in her late teens and early twenties, and most births are planned, the effect of later marriage will be to delay births but not to prevent them from ever occurring.

Roughly speaking, most countries reach replacement fertility when contraceptive prevalence is about 70 percent and each increase of 1 percent in prevalence reduces TFR by about 0.07 of a child. The observed decline in TFR in Tunisia is fully consistent with this general pattern. The 1988 prevalence level, 49.8 percent, corresponds well with the TFR of 4.2, reported for the 3 years from 1985 through 1987 (Aloui, Ayad, and Fourati 1989). Moreover, the decline of 1.3 in TFR just before the 1978 and 1988 surveys, at the same time that prevalence increased by 18.4 percent, is fully consistent with the general pattern (18.4 x 0.07 = 1.3). *Regardless of the impact of delayed marriage, it appears that after the mid-1970s all or most of the decline in fertility could be attributed to increased contraceptive use.*

Attributing Contraceptive Use to the Family Planning Program

If some or part of the decline in fertility, at least since the mid-1970s, is attributable to increased use of contraception, is it possible to say how much of the increase is due to the program? This is a difficult question to answer (Cochrane and Guilkey 1991) because of the absence of an experimental design in which what has happened in Tunisia can be compared with what would have happened in the absence of a program.

The success of the Tunisia family planning program can first be judged in terms of whether it adequately responded to an increased demand for family planning services, brought about by a desire for fewer children, which in turn resulted from such factors as declines in child mortality, improvements in general education (particularly in female education), more opportunities for female employment, or increasing costs of education.

Table 8 showed that by the late 1980s, infant mortality was about one-third of its 1960 level. In 1960 about one child in seven would die before his or her first birthday. A generation later, the proportion was about 1 child in 20. An awareness by parents that their children have a greater probability of survival is often associated with a desire for fewer births. According to the 1988 survey, the mean desired number of births among young women (below age 25) had fallen to 3.1. In urban areas the mean desired number of births was even lower, 2.8 (Aloui, Ayad, and Fourati 1989, 90). Although 3.1 is a full child above replacement-level fertility, it was lower than the actual completed fertility of women in any 5-year age group above age 30 (for example, the actual mean for women aged 30-34 was 3.8; [Aloui, Ayad, and Fourati 1989, 52]). Moreover, 57 percent of all women stated that they did not want another child. This percentage was 37 percent for women who already had two children, 59 percent for women with three children, and 82 percent for women with four or more children, confirming the emerging preference for only three children. In urban areas, 70 percent of women with three children wanted no more, compared with 40 percent in rural areas (Aloui, Ayad, Fourati 1989, 87).

A desire for fewer births would imply an increasing demand for family planning services. The 1988 DHS permits estimates of the level of unmet need for services. Unmet need is assumed to exist among women who believe themselves able to have more children, who want no more children (at least not immediately), and who are not currently using a contraceptive method.

Table 11 shows that *the level of unmet need was highest in the rural areas and among women with no education.* The unmet need for a method to stop childbearing was approximately the same as that for a method to space births, except among urban and uneducated women for whom the need for termination was greater. The lower level of unmet need for urban and better educated women simply reflects the fact that these women already had higher prevalence and were most successful in meeting their fertility preferences. The higher level of unmet need for other subgroups does not imply a failure of the program, but it does indicate that these subgroups were not being adequately reached.

Table 11. Percentages of Currently Married Women With Unmet Need for Contraception, 1988

	Unmet Need for Stopping	Unmet Need for Spacing	Total Unmet need
All	21.3	17.3	38.6
Urban	18.6	11.9	30.5
Rural	25.1	24.9	50.0
No education	25.6	18.0	43.6
Primary	16.5	17.2	33.7
Secondary	13.3	14.3	27.6

Source: Aloui, Ayad, and Fourati 1979, 88.

Another insight into the success of the program in meeting the demand for family planning comes from the relative importance of public and private sources in the delivery of services. Table 12 gives a breakdown of source of method according to the main categories that are appropriate for the IUD, female sterilization, or pill. For both the IUD and female sterilization, public (Government) facilities have been overwhelmingly the main source throughout the interval. Moreover, one study (Cochrane and Guilkey 1991) showed that access to family planning services in Tunisia was one of the most important determinants of contraceptive use. The pill, which was the third most important method but showed the least growth, has shifted from mainly public to mainly private sources; by 1988, pharmacies were the source of one-half of all pills.

Table 12 suggests that the substantial growth in two highly promoted program methods, the IUD and female sterilization, which accounted for four-fifths of the increase in modern methods between 1978 and 1988, has been due to access and availability of family planning services in public hospitals and health centers. If these facilities had not been continuously making these methods available during the decade, it is doubtful that the prevalence of these methods could have increased as much as it did. The team also noticed earlier that some of the increase in IUD use appeared to result from a shift away from use of pills by better educated women. Thus, the fact that pills were becoming increasingly associated with private pharmacies also speaks for the momentum in the Government program.

The family planning program can be judged on the more difficult issue of whether it has stimulated or increased the demand for services, above and beyond the level of demand produced by exogenous influences, such as declines in mortality and improvements in female education. It is possible for a program to be highly successful in meeting the demand for services but not to stimulate that demand itself. To illustrate the ambiguity of the evidence on this issue, note that the substantial level of unmet need depicted in Table 12 can be interpreted either as a consequence of the program's success in stimulating demand or as an indication that the program is not meeting the demand that exists.

Table 12. Source of Current Method for Currently Married Women Ages 15-49 Using IUD, Female Sterilization, or Pill (percent)

	1978	1983	1988
IUD			
Public sector	91	89	89
Private doctor	7	10	11
Other	2	1	0
Female sterilization			
Public sector	95	97	98
Private doctor	5	3	2
Pill			
Public sector	63	46	41
Private doctor	7	8	8
Pharmacy	28	40	49
Other	2	6	2

Source: United Nations 1992.

Cochrane and Guilkey (1991) examined the relationship between female education and contraceptive use, noting that Tunisia had much higher contraceptive prevalence than would be expected for its level of female education, relative to corresponding figures for other countries. This observation suggests, although it cannot prove, that the higher than expected prevalence in Tunisia may be attributable to program impact.

Cochrane and Guilkey also found that the chance of a woman using family planning was (1) positively related to her report of having heard a family planning message in the media and to the number of contraceptive methods available locally and (2) negatively related to the level of infant mortality. Studies in other countries have rarely shown such a strong effect of access to specific methods. Access to better health, water, and sanitation facilities also improved the chances of a woman using a method.

The education of the husband is a significant predictor of use of family planning and of specific methods. However, the marginal effect of the woman's education is not significant. In Tunisia, female education is low and shows relatively little variation. More than one-half of the women in the Cochrane and Guilkey study had "no education." Moreover, as is observed in all countries, there was a strong correlation between the educational levels of husbands and wives. Both of these factors would tend to reduce the marginal effect of the wife's education.

Cochrane and Guilkey further found that contraceptive use was higher in areas where infant mortality was lower. As they stated, "this implies that programs to reduce mortality and make family planning available both are central to stimulating the motivation to use contraception" (Cochrane and Guilkey 1991).

The Cochrane and Guilkey comparison of Tunisia with other countries included many countries with active programs, and those programs may well have had an impact on prevalence. Therefore, the evidence of an effect in Tunisia is conservative and refers only to the portion of the impact that is better than average.

These relationships suggest that the Tunisia family planning program is indeed a major determinant of contraceptive use in general, as well as of the use of specific methods. The level of contraceptive use was greater than would be expected from such socioeconomic indicators as female education, and Government facilities were overwhelmingly the sources for the main methods, implying that the program had both stimulated the demand for services and met the bulk of this demand. However, because desired family size was still about one child above replacement level and because nearly 40 percent of currently married women still had an unmet need for termination or spacing methods, it is clear that much remains to be done to affect demand for and use of family planning.

Health Impact

Child Health

This section addresses the impact of the family planning program on the mortality and morbidity of children (see also Appendix J). CDIE identified ways in which the family planning program may have also reduced the mortality and improved the health of children, as a by-product of its primary objective of reducing fertility.

Such an analysis involves two main steps. The first step is to estimate the contribution of fertility decline to mortality decline. The second is to estimate how much of this contribution can be traced to the family planning program. The following discussion focuses mainly on the first step.

The most obvious impact of fertility decline is that if there are fewer births there will then be fewer children at risk of dying. That is, even if there has been no change in the *rate* of child deaths, there will still be a reduction in the *number* of child deaths simply because fewer children are being born. The number of child deaths that have been averted in this sense is proportional to the number of births that have been averted.

An estimate of deaths averted in this way requires estimates of the population size, CBR, and IMR, which were given in Table 7. The annual number of infant deaths is basically a product of these three numbers. For example, at the middle of the 1985-1989 interval, the total population was approximately 7.72 million (the average of 7.26 million [the population in 1985] and 8.18 million [the population in 1989]), so that the average annual number of infant deaths during the late 1980s was approximately (7.72)(31.1)(52) = 12,485.

Ignoring the fact that the population size in the late 1980s would have been much greater if fertility had not declined, it is possible to simulate what the annual number of infant deaths would have been if CBR and IMR estimated for earlier years were still in effect in the late 1980s, acting on a population of 7.72 million persons. For example, if CBR and IMR for 1960-1964 had been applied to this base population, there would have been (7.72)(46.5)(155) = 55,642 infant deaths per year. If the rates for 1975-1979 had operated on this base population, there would have been (7.72)(36.3)(88) = 24,661 infant deaths per year.

It is clear that the combination of declining fertility and declining infant mortality has brought the volume of infant deaths to much lower levels than would have been expected based on previous levels. For example, with standard decomposition[5] procedures

- Approximately 71 percent of the net difference in infant deaths was due to the decline in IMR between 1960-1964 and 1985-1989

- Approximately 29 percent of the net difference in infant deaths was due to the decline in CBR between 1960-1964 and 1985-1989

Although the decline in IMR has been much more important than the decline in CBR, the effect of the reduced CBR has been substantial. The fraction of deaths averted in this way that could be attributed to the family planning program would be the same as whatever fraction of averted births could be attributed to the program.

It is questionable to attempt to assign credit for a child death that did not occur simply because no child was born. Instead, an alternative approach is possible in which mortality decline is expressed in terms of possible reductions in mortality *rates* that may be attributable to the family planning program. This method has been applied only to the interval from the mid-1970s to the mid-1980s because of limited availability of data.

CDIE analyzed the health impact of family planning in terms of changes in the relative frequency of "high-risk" categories—that is, categories of births that tend to have higher mortality rates. Four such categories have been identified in international comparisons: births to very young women (ages 17 or younger); births to older women (ages 35 or older); high-order births (fourth and above); and closely spaced births (fewer than 24 months apart). Of course there may be additional risk factors in specific countries, or one or more of the factors listed may not actually show a higher risk of infant morbidity and mortality.

The second pair of columns in Table 12 shows the relative risk of child deaths in specific risk categories and combinations of risk categories, as calculated for the 1978 and 1988 Tunisian surveys. The figures include all children born during the 5 years before the respective surveys and considers whether they survived or died before the survey dates. The mortality rate (number of deaths divided by number of births) calculated from such data can be interpreted roughly as the probability that a child will die before age 2.5. The overall rates were 86

[5]For analysts familiar with interaction terms, the interaction term has been allocated equally between the IMR and CBR effects in this decomposition.

deaths per 1,000 births before the 1978 survey and 51 deaths per 1,000 births before the 1988 survey.

The rate for the "no risk" category is taken as the standard against which the other categories can be evaluated. Although not shown in the table, this rate was 58 deaths per 1,000 births before the 1978 survey and 40 deaths per 1,000 births before the 1988 survey. Table 13 gives the ratio of mortality in other categories to that in the standard. For example, if the birth interval was fewer than 24 months, births before the 1978 survey had their chance of dying elevated by 48 percent (the relative risk is 1.48), and such births before the 1988 survey had their chance of dying elevated by 58 percent (the relative risk is 1.58). Entries showing few births are statistically unstable; their relative risk appears in parentheses. Ignoring such entries, all so-called "risk" categories did indeed show an elevated risk of deaths, except for the risk category of birth order greater than three. The first two columns of Table 13 give the percentage of all births (in the preceding 5 years) that were in each category. They show that in Tunisia, in the 1970s as well as in the 1980s, very few births were in the "too young" or "too old" risk categories—a total of only about 2 percent in each survey. About 20 percent of births were in the "high-order risk" category, but in Tunisia (as in several other countries) high-order births actually had better chances of survival. In other words, it is incorrect to describe high-order births in Tunisia as being at higher risk of mortality.

The most significant high-risk factor, in terms of both frequency of occurrence and relative risk, is a short birth interval, either as a single risk factor or in combination with other factors. In both time periods, about 15 percent of births had a short birth interval as a single risk factor. In the 1970s, another 20 percent of births had a short birth interval in combination with other so-called "risk factors." But by the 1980s this figure had declined to about 14 percent.

Declines in these mortality rates can be summarized in the following way:

- Tunisia experienced an overall reduction in the risk of child deaths due to improvements in such areas as public health measures, sanitation, and vaccinations. These improvements enhanced the survival chances of all children, regardless of their risk category. Between the two surveys, the overall chance of a child death fell from 86 to 51 deaths per 1,000 children, a reduction of 41 percent.

- Part of the overall decline can be attributed to reductions in the death rates in the specific categories of risk. For example, in the no-risk category, the chance of a death fell from 58 to 40 deaths per 1,000 children. In all other risk categories combined, the chance of death fell from 98 to 58 deaths per 1,000, again a reduction of 41 percent. Standard demographic

decomposition of change in rates leads to the conclusion that approximately 80.1 percent of the net improvement in child mortality was due to improvements in the category-specific rates.

- Because of the change in the distribution of births across the risk (and no-risk) categories between the two surveys—specifically, reductions in the number of high-risk births—some change in overall child mortality would be expected. The decomposition indicates that approximately 19.9 percent of the net improvement in child mortality was due to changes in the distribution across risk categories.

The effect of the redistribution across categories has the following simple interpretation. The overall death rate being discussed here declined in 10 years from 86 to 51 deaths per 1,000 births, or 35 points. However, even if there had been no improvements in survivorship within risk categories between the pre-1978 and pre-1988 reference periods, this rate would still have fallen by 7 points (19.9 percent of 35 points). This effect can be regarded as a by-product of the fertility transition, which altered the pattern as well as the level of childbearing.

Table 13. Percentage of Births in "High-Risk" Categories and the Relative Risk of Mortality in Those Categories[a]

	Percentage of births		Risk ratio	
	1978	1988	1978	1988
In no risk category	29.5	38.8	1.00	1.00
In one risk category	35.9	37.6	1.18	1.18
Mother's age < 18 yrs.	0.8	0.8	(1.66)	(2.69)
Mother's age > 34 yrs.	1.0	1.2	(1.09)	(0.49)
Birth interval (BI) < 24 mos.	15.5	15.3	1.48	1.58
Birth order (BO) > 3 mos.	18.7	20.0	0.92	0.86
In *more than one* risk category	34.6	23.7	2.05	1.87
Age < 18 yrs. and BI < 24 mos.	0.3	0.1	(3.84)	(0.00)
Age > 34 yrs. and BI < 24 mos.	0.3	0.3	(2.22)	(0.00)
Age > 34 yrs. and BO > 3 mos.	14.9	9.9	1.13	1.08
Age > 34 yrs. BI < 24 mos. BO > 3	6.4	2.8	3.50	3.22
BI < 24 yrs. and BO > 3 mos.	12.8	10.7	2.36	2.31
In *one or more* risk categories	70.6	61.3	1.61	1.45

[a]For births in the 5 years preceding the 1978 Tunisian Fertility Survey and the 1988 DHS.

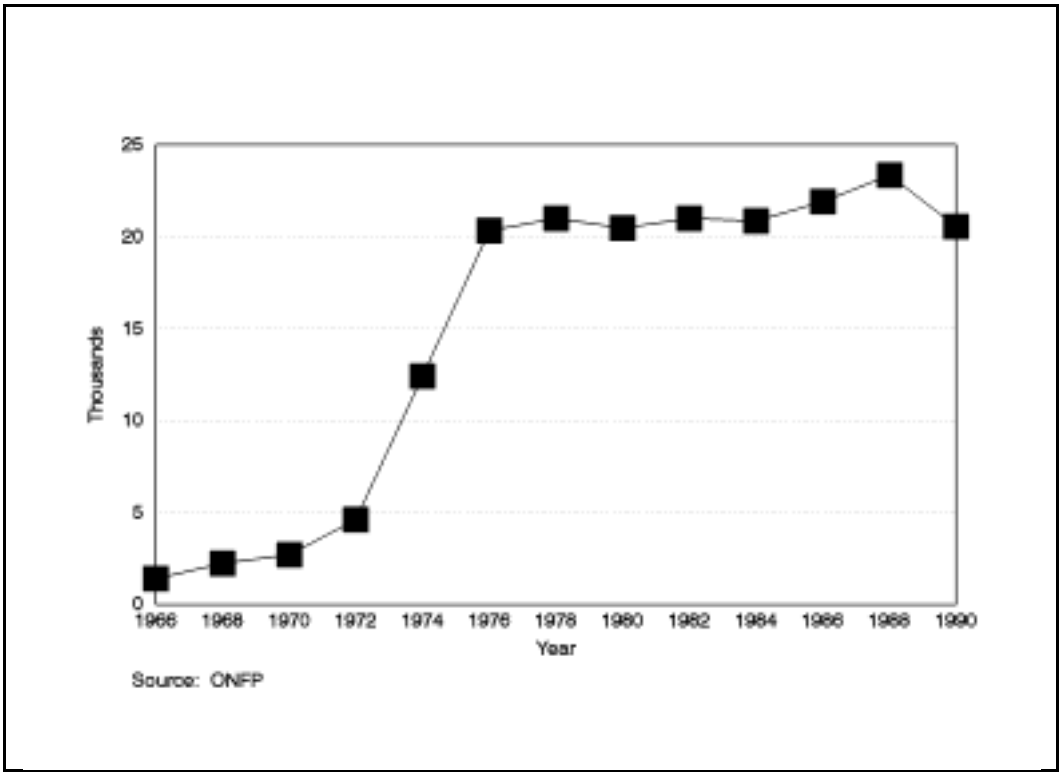
Source: Special tabulation by DHS staff.

The question remains, To what degree was the program responsible for the change in the distribution across risk categories? While it is not possible to provide the answer, the point can be repeated that even if the program could take all of the credit for such changes, it would account for only about one-fifth of the observed decline in infant and child mortality. It thus appears that the program may have had some indirect effect, but a minor one.

Women's Health

The availability of highly effective contraceptives—principally sterilization and the IUD—has contributed to a relative reduction in the incidence of abortion and has thus enhanced women's health and well-being. Figure 4 shows that the absolute number of abortions remained roughly constant in the last decade, averaging 21,000 per year. Nevertheless, the number of married women of reproductive age increased by more than 50 percent.

Figure 4. Number of Abortions in Tunisia, 1966-1991



Although public sector physicians perform abortions in Tunisia under safe medical conditions, all abortions pose risks, especially when women have repeated abortions. Studies in Tunis have shown that more than one induced abortion results in a higher risk of ectopic pregnancy, premature rupture of the membranes, bleeding in the third trimester, and premature delivery (Ennaifer 1988). By reducing the relative incidence of abortion, family planning has reduced the incidence of a wide range of health risks for women and has contributed to a reduction in maternal mortality and morbidity. And by reducing the incidence of these health problems, Tunisian society expends fewer scarce health resources on problems related to women's health.

Socioeconomic Impact

Measuring socioeconomic impacts of the family planning program is as difficult as measuring the program's demographic impacts. The socioeconomic environment and the family planning program are most likely mutually reinforcing. Several socioeconomic indicators, such as education attainment, literacy, and labor force participation of women, are discussed in other sections of this report.

One aspect of socioeconomic impact of the program was estimated using the FamPlan model. Using the model, savings in Government expenditures in the education and health sectors (two sectors strongly linked to population structure and size) were estimated based on two different scenarios: with a family planning program and without a family planning program. As Table 14 shows, cumulative savings in education and health expenditures exceeded cumulative costs (i.e., family planning program expenditures) by 1976. Annual net savings, or annual total sectoral savings minus annual family planning program expenditures, were estimated to reach almost $250 million by 1991. Cumulative net savings for the entire 1966 to 1991 period were estimated to be $952 million.

Table 14. Comparison of Estimated Expenditures in Health and Education Sectors With a Family Planning Program and Without a Family Planning Program

Year	Sectoral Expenditures		Total Sectoral Savings	Family Planning Expenditure	Net Cumulative Savings ($ millions)
	Without a Family Planning Program	With a Family Planning Program			
1966	13,030	13,030	0	190	(190)
1971	19,376	19,326	50	466	(1,832)
1976	62,714	61,918	796	679	(3,171)
1981	232,107	221,987	10,120	2,507	15,139
1986	737,052	673,940	63,112	5,307	188,554
1991	1,887,389	1,627,378	260,111	10,127	952,360

Contribution of A.I.D. to Program Impact

The team could not find data concerning exact amounts contributed by the Government of Tunisia and obtained from outside sources for the entire 1965-1991 period of the study. Estimates of the 1965-1980 and the 1981-1991 periods have been prepared and presented in Table 15, based on spending reports of A.I.D., UNFPA, and World Bank projects and on the ONFP budget for 1981-1989 (see Appendix D and ONFP budget reported in the Tunisia Population Strategy [Pillsbury, Maguire et al. 1990]).

Table 15. Estimated Total Program Costs Met by the Government of Tunisia and External Sources, 1965-1991 ($ million)

Source	1965-1980	Percent	1981-1991	Percent	Total	Percent
A.I.D. Bilateral	12.0	20	9.0	12	21.0	15
A.I.D. Central[a]	14.0	23	15.0	20	29.0	22
Subtotal	26.0	43	24.0	32	50.0	37
UNFPA	8.0	13	5.4	7	13.4	10
World Bank	4.8	8	8.5	11	13.3	10
Other[b]	5.0	8	5.0	7	10.0	7
Government of Tunisia	16.5	27	33.0	43	49.5	36
Total	60.3		75.9		136.2	

[a] Includes Public Law 480 funding
[b] Includes Ford Foundation funding of first Tunisia family planning (trial) project

These estimates suggest the following:

1. Supplying 43 percent of total program costs for the earlier, formative period, A.I.D. was the major single contributor, providing one and one-half times more than other funders and a more than the Government of Tunisia.

2. External sources paid almost three-fourths of total program costs through 1980.

3. During the 1980s A.I.D. remained the largest external donor.

4. Although the Government of Tunisia total funding during the 1980s was twice its 1965-1980 total, it still had to rely on external donors to meet 57 percent of funding requirements.

5. Over the 26-year period A.I.D. was the principal outside supplier of

funding, equaling funding by the Government of Tunisia and exceeding by $13 million the contribution of all other donors.

6. External sources met almost two-thirds of total program costs for the 1965-1991 period.

7. Over the 25-year period, total funding averaged a little over $5 million per year, of which A.I.D. supplied almost $2 million, a substantial contribution to a country whose population did not reach 8 million until the end of the 1980s.

The magnitude of A.I.D.'s support over the 1965-1991 period leads to the following observations:

1. Without A.I.D.'s assistance in laying a foundation in the first 15 years, family planning in Tunisia would not have been as successful as it became. Moreover, because Tunisia was one of the first countries to receive population assistance from A.I.D., it was a "special case" to population professionals in A.I.D., who used central funds to complement the bilateral projects of 1968, 1978, and 1985 and to sustain the Tunisian program when—for one reason or another—bilateral money was not forthcoming. A major gap in bilateral support occurred from 1982, when the second project ended, to 1986, when the third project commenced. The A.I.D Population Office put together a 5-year, $9-million package to ensure continuing significant U.S. involvement in family planning in Tunisia.

2. Nevertheless, as important as A.I.D.'s contributions were, the record does not show that the Agency had a long-term strategic plan for family planning in Tunisia. Projects were designed, defended, authorized, and implemented on their merits, with little linkage to one another or to projects of other donors. Despite some discussion in 1974 in A.I.D. that the Government of Tunisia had to prepare a long-term plan for family planning that would be a basis for later A.I.D. support, there was no serious followup and A.I.D. did not insist that its assistance required Government of Tunisia commitments beyond the term of each discrete project. The A.I.D. population assistance program in Tunisia was an ad hoc collection of successive, and on the whole, successful, bilateral and centrally funded activities, lacking a long-range vision or perspective. For example, a 1967 Mission document listed family planning as a "miscellaneous project that does not fall neatly into the 5 main fields of activity." A.I.D. approved the second phase of the first bilateral project on condition that A.I.D.'s family planning support to Tunisia be terminated by mid-1977; by 1979, although the Mission at that time said it felt its family planning assistance was "vital," it did not plan obligations beyond 1981.

3. Although there are no hard quantitative data to demonstrate that A.I.D. inputs led to increases in the contraceptive prevalence rate and reductions in TFR, in view of the magnitude of the A.I.D. contribution there is a reasonable presumption of cause and effect; that is, a large part of the success of the Tunisia family planning program can presumably be attributed to A.I.D.'s participation. For example, most of the decline in fertility in the 1980s resulted from increased contraceptive use. This was a period of major A.I.D. bilateral and especially, central bureau support. Throughout the history of the Tunisia family planning program, A.I.D. supplied the bulk of all contraceptives used.

   There is further evidence that contraceptive use was greater for women who heard messages on the subject or had easier access to family planning services. A.I.D. strongly supported outreach programs, particularly the work of the animatrices, especially in the 1981-1983 period when the number of individual contacts between animatrices and clients increased 70 percent. Also, beginning in 1986, A.I.D. became the sole donor for mass media campaigns.

   Increased use of the clinical methods of IUDs and female sterilization accounted for 70 percent of the increase in prevalence between 1978 and 1988. Public sector facilities were the principal source for these methods. A.I.D. assistance between 1978 and 1988 was directly targeted to improve public sector service delivery in the clinical methods.

6. CONCLUSIONS

This section reports conclusions drawn from the evaluation of A.I.D.'s participation in the national family planning program of Tunisia.

Longer Term Effects or Impact

Demographic Impact

Tunisia's TFR declined dramatically during the 1970s and 1980s. It is estimated to have been 7.2 in 1966, 5.8 in 1976, and 4.5 in 1986. During the same interval, contraceptive prevalence increased from negligible levels in the mid-1960s to 31.4 percent in 1978 and 49.8 percent in 1988. Evidence leads to the conclusion that the Tunisia family planning program has been a major determinant of contraceptive use in general, as well as of the use of specific methods, and that it has successfully increased the demand for services over the demand that might otherwise have been expected:

- While much of the early decline in fertility may have been produced by rising age at marriage, almost all of the decline in the 1980s can be attributed to the increased use of modern contraception, stimulated by a desire for smaller families.

- The program has been relatively successful in meeting the demand for family planning services. Total unmet need in 1988 was 38.6 percent.
- Approximately 70 percent of the increase in modern method prevalence between 1978 and 1988 is attributable to increased use of IUDs and female sterilization, two strongly promoted methods.

- The main source for the two methods (IUDs and female sterilization) over the 1978-1988 decade was public sector facilities. One study (Cochrane and Guilkey 1991) showed that access to family planning services in Tunisia was an extremely important determinant of contraceptive use.

- The rate of contraceptive use was higher than would have been expected for Tunisia's relatively low level of female educational

attainment. This suggests a program impact, but causality cannot be proven.

Health Impact on Infants and Children

The Tunisia family planning program may have had some indirect effect on the observed decline in infant and child mortality, but it was probably a minor one. This is because (1) in the 1970s and 1980s, very few births were in the "too young" or "too old" risk categories; (2) in Tunisia, infants in the "high-order births" risk category actually had better rather than worse chances of survival; (3) while there was a reduction in the number of high-risk births between 1978 and 1988, analysis showed that improvement in child mortality due to changes in the distribution across risk categories amounted to only about one-fifth of the observed decline in infant and child mortality. Thus, the conclusion is that the role of the family planning program in the decline of infant and child deaths appears to be relatively modest.

Health Impact on Women

Focus group discussions revealed that many wives and husbands felt that family planning had positive effects on women's health (see Appendix C). To the extent that the Tunisia family planning program made available contraceptives that allowed women to reduce unwanted pregnancies and abortions, it contributed to women's health and well-being. Tunisian researchers have shown that having more than one abortion has serious, negative health consequences for women. In Tunisia, there was a relative decline in abortions between 1976 and 1991 and an absolute decline between 1988 and 1989. Between 1976 and 1991, the number of abortions performed in public sector facilities remained at approximately the same level (between 20,000 and 25,000) while the number of women of reproductive age increased by more than 50 percent. Between 1988 and 1989, abortions in public sector facilities declined by 9.35 percent (ONFP 1989).

A.I.D. Contributions to Impact

A.I.D.'s assistance to Tunisia in family planning did not follow a long-term strategic plan; it was rather a collection of ad hoc, although successful, bilateral and centrally funded activities.

Estimates of total program costs met by the Government of Tunisia and external donors over the 1965-1990 period demonstrated that A.I.D. was the major

single donor, matching the $50 million supplied by the Government. A.I.D. support from 1965-1980 helped lay the foundation for the 25-year A.I.D./ONFP collaboration.

Although no hard quantitative data exist to demonstrate that A.I.D.-supplied inputs led to increases in the contraceptive prevalence rates and reductions in TFR, in view of the magnitude of the A.I.D. contribution, there is a presumption of cause and effect; that is, part of the success of the Tunisian program can be attributed to A.I.D.'s participation. For one thing, there is the testimony of the Tunisians themselves, who gave credit to A.I.D.; the ONFP director, reflecting on 20 years of cooperation, said A.I.D.'s role was exemplary, with rich results in many areas, enabling the program to achieve outstanding success recognized nationally and internationally. There are other indications, as well. For example

- Most of the decline in fertility in the 1980s was due to increased contraceptive use. Throughout the entire history of the Tunisia program, A.I.D. supplied most of the contraceptives.

- There is evidence that contraceptive use was greater for women who heard messages on the subject or who had easier access to family planning services. A.I.D. was active in both areas: it supported outreach programs and was the sole donor for mass media campaigns.

- Increased use of the clinical methods of IUDs and female sterilization accounted for 70 percent of the increase in prevalence between 1978 and 1988. A.I.D. assistance during these years targeted public sector service delivery in these clinical methods.

Program Performance

Effectiveness

Nonprogram factors supporting and inhibiting effectiveness. The three most important factors independent of the family planning program effort that have allowed family planning to progress steadily in Tunisia were (1) the commitment of national leaders, from the President on down, creating a positive policy environment; (2) the relative strength of the economy, especially in the 1970s; and (3) the more moderate character of Islam practiced by Tunisians. Some other nonprogram factors that *positively influenced* acceptance of and continuation with family planning are as follows:

- *Perception of the improved health of mothers as a result of family planning.* This theme emerged from the focus group discussions with both men and women.

- *Perception of improved infant health.* Many women in the focus group discussions were convinced that family planning—by enabling spacing of births—improved their children's health. Also, better health meant fewer child deaths and fewer pregnancies.

- *Perception of the economic costs of children.* Confirmed repeatedly in focus groups was the point that the cost of living was one of the most important factors influencing fertility decisions.

- *Trend toward later marriage.* An important part of the fertility decline up to the mid-1970s was a trend toward later marriage; in 1988, of all women ages 20-24, only 21 percent had married before age 20. This tendency to delay marriage was due in part to the more progressive leadership and legislation that raised the age of marriage and advanced women's rights in several areas.

- *Generally enhanced status of women.* Delaying marriage contributed to improvements in women's status, as did certain other changes, including expansion of educational opportunities; participation in the labor force to a greater extent than in other Muslim countries; and passage of laws abrogating polygamy and abandonment, granting women equal rights in divorce proceedings, and assuring women a legal status almost equal to that of men with respect to custody of children and inheritance and ownership of property.

However, several nonprogram factors were seen to have *negatively influenced* acceptance and continuation of family planning:

- *Rumors, myths and inaccurate information about methods and their side effects.* These conditions, brought to light through focus group discussions, are not unusual for any culture in which the majority of women are illiterate.

- *Perception of abortion as a family planning method.* Abortion is one of the leading causes of mortality in developing countries. Although ONFP does not consider abortion a family planning method, some women do accept the procedure for that purpose.

- *Passive role of men in family planning.* In general, men have not accepted responsibility for using contraceptive methods, even though

in the Tunisian culture men have the final word about family size. Men are especially opposed to vasectomy.

- *Perception of female sterilization as a sin.* Focus group discussions brought out the belief on the part of some couples that female sterilization is against the laws of God.

Program factors supporting and inhibiting effectiveness. There are several program factors that have *contributed to* the effectiveness of the family planning program, as follows:

- *Adoption of highly effective modern methods; in particular, the IUD and voluntary female sterilization.* These two methods accounted for 70 percent of usage of all modern methods; with the pill added, the three constituted 92 percent of total modern method usage and 74 percent of usage of all contraceptive methods.

- *Decentralized management.* This was accomplished by setting up a comprehensive services delivery center (CREPF) in each region, by staffing key positions with well-trained professionals, and by investing CREPF heads (delegates) with authority to manage, including control over budgets.

- *Diversified service delivery.* ONFP has used both public- and private-sector channels for service delivery. A three-tiered public sector program featured CREPFS and family planning centers, fixed centers, and mobile units. Pills and condoms have also been distributed through private physicians, nurse-midwives, and pharmacies.

- *Training.* ONFP developed the capability to train Tunisians in family planning. ONFP now can provide management, clinical, and in-service training and is moving toward institutionalizing preservice training in medical, social work, and nursing schools. Training constituted a major investment, and in general, its effects were felt to be positive, particularly with respect to the work of the sages femmes and the animatrices. Successive donor-funded projects have continued to include various kinds of training programs.

- *National system of service statistics; Operations Research at the regional level.* ONFP established an effective national system of collection and analysis of service statistics. There is good evidence of regional capability in conducting operations research and using results.
- *Attention to quality of care.* The CDIE team concluded from interviews and discussions with midwives and other providers in the field

that quality of care was high in many instances, even in remote areas with few resources.

- *Interpersonal communication and home outreach strategies.* Closely related to the quality of care dimension was the program's emphasis on interpersonal communication with and home outreach to illiterate women (by employing female midwives as key service providers and animatrices as educators). This appears to have been particularly appropriate in an environment where women have relatively low status and a majority are illiterate.

Program factors *inhibiting* effectiveness are the following:

- *Limited participation by the private sector.* With the exception of sales of condoms and pills by pharmacies, private physicians, and nurse-midwives (25 percent of all users obtained their method from private sector outlets), there has been very little involvement in the national family planning program by the private sector, including both the nonprofit, nongovernmental organizations and the for-profit commercial sector. Even the Contraceptive Social Marketing (CSM) program, normally a private sector enterprise, was a public sector program in Tunisia.

- *Failure to use research findings to improve program implementation.* The quality of research was uneven; the team found it difficult to locate examples of applications of research findings to program operations at the national level.

- *Insufficient access to contraceptives for women in the more remote, rural areas.* Despite the considerable effort to improve access of the rural poor to family planning, this group was still underserved compared with the economically better off and urban women in general. Urban women required about half the average travel time to contraceptive sources for all methods as rural women. Forty-two percent of rural women reported that it was difficult to reach such sources, in comparison with only 21 percent of urban women.

- *Failure to increase male participation.* Vasectomies were offered at all public health units, making male sterilization as available as female sterilization, but men seldom elect this procedure. Also, despite A.I.D.'s substantial program emphasis on condoms, they have never been popular among Tunisian men. Three indicators are (1) that the CSM program, which featured condoms as a principal contraceptive, was not very successful; (2) that the L-M Scale score for condoms

(access and availability) dropped from 1982 to 1989; and (3) that the IEC effort did not especially target condom use among men for family planning purposes. Focus group discussions revealed widespread misunderstanding among men concerning vasectomy. Such perceptions could have been addressed through education and counseling. In not targeting one-half of the married population with information concerning contraception, ONFP missed important opportunities to increase prevalence.

- *Failure to devise strategies for abortion followup.* The Tunisia family planning program did not devise strategies for abortion followup. Because abortion is one of the leading causes of maternal mortality in developing countries, and because having more than one abortion causes a range of negative health effects, it remains a major health problem in most developing countries. Moreover, women who have had an abortion constitute a special target group in need of effective contraceptives. Tunisia was a unique laboratory in which to study and address these problems because (1) abortion is legal and (2) data on abortion were collected by the public sector. In addition, the team's focus groups indicated that many women seemed to be unaware of the negative health consequences of having more than one abortion. A.I.D. could have made a greater contribution to increasing contraceptive prevalence if it had worked with ONFP to target services and information to women who had had one abortion (this was permitted under the law but frequently was not done by A.I.D.-funded groups [Blane and Friedman 1990]).

Efficiency

At the time of the team's visit in 1992, ONFP was at the point where estimating the cost of delivering family planning services had become critical. Although to address this issue ONFP had created a specific division that would be charged with cost accounting, the team's conclusion was that such a division was needed over a decade ago when A.I.D. and the Government of Tunisia recognized that A.I.D. assistance would eventually come to an end. A.I.D. and ONFP could have paid much greater attention to efficiency questions from the beginning of A.I.D. assistance, making efficiency an integral element of all aspects of A.I.D. assistance.

Using the FamPlan model, savings in Government expenditures in the education and health sectors were estimated according to two different scenarios. Estimated net savings were realized in 1975 and rose from $116,000 in 1975 to $250 million in 1991. Cumulative savings from 1964 to 1991 were an estimated

$952 million. These findings are not untypical of family planning programs, but in Tunisia the heavy initial capital investment in a vertical, centralized program probably resulted in less efficient operations than would have been the case had family planning been integrated more fully with the public health system, with savings resulting from sharing both personnel and infrastructure.

Sustainability

While prospects for continuing of the program are good—because of strong political commitment, increasing demand for contraceptives, and very good institutional capacity at many levels—the level and scope of program benefits (for clients, ONFP personnel, and Tunisian society) appeared to have already declined and may continue to decline as the Government of Tunisia struggles to finance and to find donor funding for key programmatic components and contraceptive commodities. The Government of Tunisia and ONFP's likely difficulties in financing contraceptive commodities—based on the projected doubling of contraceptive costs over the next 20 years, which is an underestimate of real costs—will undermine overall sustainability.

Analyses and interviews suggested that, after the termination of A.I.D. assistance in 1990, benefits from specific program components were not being provided at the same level as they were when A.I.D. provided funding.[6] Program benefits for clients included access to trained personnel, educational materials, and providers (animatrices) who could inform and counsel. Program benefits for ONFP personnel included opportunities to be employed and trained and to participate in research programs. Program benefits for Tunisian society included (in the 1980s) an increasing number of acceptors of family planning. Specifically, between 1989 and 1991, the number of ONFP personnel in training dropped; management training programs did not continue; preservice training modules were not being used as planned in the schools; the numbers of animatrices in training declined; no funding existed for operations research studies at headquarters; and the number of acceptors of IUDs, pills, and female sterilizations decreased after 1989.

Economic factors (slow economic growth in the 1980s; budgetary difficulties, especially with respect to contraceptive financing; and the imposition of austerity programs) undermined the sustainability of the family planning

[6]Program benefits will undoubtedly increase because of the startup of World Bank and UNFPA projects in the 1990s. However, the team does not accept the view that a program's ability to find other donor financing is an indicator of sustainability.

program. Yet, the team's focus group research showed that certain economic factors, especially the cost of living, were critically important in driving couples' demand for contraceptives. Increased demand for contraceptives could contribute to sustainability because of couples' willingness to purchase contraceptives through the CSM program. Moreover, growing unemployment has intensified politicians' concerns about rapid population growth rates, enhancing political commitment to the program. Thus the role of external economic factors is complex. Some undermine and others contribute to program sustainability.

A.I.D. Contributions to Effectiveness and Sustainability

A.I.D. Contributions to Effectiveness

A.I.D.'s most important contribution was to *support capacity building in areas that research has shown (Ross et al. 1989; National Research Council 1986) to be critical for increasing contraceptive prevalence*—most important, the capacity to increase the availability of and access to highly effective, modern contraceptive methods; the capacity for outreach; and the capacity to increase coverage. A.I.D. assistance to the Tunisia family planning program made important contributions for the following reasons:

- *A.I.D. support helped increase access and outreach.* Throughout the 1980s, A.I.D. helped diversify the modes of service delivery, in both the public and private sectors, by funding mobile units for rural outreach, animatrices for home and rural outreach, and contraceptive social marketing (beginning in 1986), thereby increasing access, availability, and outreach.

- *A.I.D. support for highly effective clinical methods helped increase use and contraceptive prevalence.* Beginning in the late 1970s, A.I.D. financed training and technical assistance in highly effective modern methods, especially female sterilization and IUDs, thereby contributing to increases in contraceptive prevalence.

- *A.I.D. support helped increase coverage.* A.I.D. sponsored extensive training in management and education, communication, and counseling throughout the entire period of assistance, thereby increasing the number and enhancing the abilities of service providers and managers.

Although A.I.D.'s funding of the CSM program increased availability by providing contraceptives at about 1,000 supply points, overall the CSM program contributed relatively less to impact during the period under consideration in this

study. The principal reason for its more limited contribution to the increase in prevalence was that A.I.D. and ONFP did not fully exploit the opportunities for commercial distribution in the private sector. ONFP implemented the program entirely through the public sector. Had ONFP employed the private sectors's marketing, advertising, and distribution expertise throughout the 1980s, private-sector acceptors of pills and condoms would probably have made a greater contribution to contraceptive prevalence by 1990. A.I.D. should be given credit for strengthening the commercial distribution of contraceptives. However, by agreeing in 1986 to fund a wholly public-sector effort in the absence of any privatization plan, A.I.D. missed opportunities to increase access to contraceptives.

A.I.D. Contributions to Sustainability

Institutional sustainability. A.I.D. contributed directly to ONFP's management capacity by funding INTRAH (for developing needs-based training and evaluation of training), the Population Council (for assistance in evaluation and cost-effectiveness analysis) in the early 1980s, and RONCO (for assistance in diagnosis, planning, and evaluation management; in needs-based training strategies; and in evaluation of training) in the mid- to late 1980s. The team's interviews with regional staff provided strong evidence of regional managers' capacity for problem solving and strategic planning. This finding suggests that family planning training involves much more than the acquisition of technical knowledge about family planning and that A.I.D's decision to fund family planning *management training* over the past decade was a sound one.

A.I.D. also contributed to institutional sustainability by helping establish centers for training in surgical contraceptive techniques (the Ariana Clinic) and for service delivery (NTC). Thereby, ONFP developed the capacity to train its own people in virtually all aspects of family planning. In addition, A.I.D.-funded demographic research helped keep population on the national agenda. A.I.D.-supported communications activities contributed to universal recognition of family planning. Such activities undoubtedly enhanced the sustainability of the ONFP program as a whole.

However, components of the program that enhanced institutional capacity and that benefitted from A.I.D's assistance—such as management training, training of animatrices, and operations research at headquarters in Tunis—will not provide the same level of benefits or outputs as they provided with A.I.D. funds. Thus, these aspects of institutional capacity cannot be fully sustained.

Financial sustainability. A.I.D.'s support of the CSM program did not contribute to the financial sustainability of either the CSM program or the public sector program by the time A.I.D. terminated assistance in 1990. This is so

because (1) in 1990, the CSM program was still a public sector program, thus requiring Government of Tunisia funds; (2) a price increase was needed to recover program costs; and (3) revenues did not flow directly to the CSM program—they were put into a general ONFP account.

Although the 1991 A.I.D. Project Assistance Completion Report indicated that ONFP "strongly resisted attempts by A.I.D. to wean them from dependence on one external donor," the record is not clear on the specific steps A.I.D. took to attempt to do this. For example, A.I.D. did not sponsor any other analyses or pilot programs to test cost-recovery schemes. Other conclusions about financial sustainability follow.

Planning for sustainability. The available literature suggests that family planning and health projects that include a plan for sustainability at the *outset* of the project, as well as a plan to phase out donor assistance and phase in local support, are more likely to be sustained. In brief, sustainability does not just happen; it has to be planned in most instances. Endorsement of this kind of approach comes from a variety of A.I.D health and family planning studies. As noted earlier, A.I.D. did not have an overall strategic plan for its assistance to family planning in Tunisia; it is therefore not surprising that it did not plan for sustainability, a key element in any strategy that envisages eventual termination of A.I.D. assistance.

It was clear by the late 1970s that A.I.D./Washington felt that sufficient progress had been made in Tunisia family planning. Knowing this, USAID/Tunisia could have proposed an overall plan for sustainability when the Mission was assured of continued central funding in 1980. Such a plan, prepared collaboratively by the ONFP and A.I.D., might have included pilot programs for cost recovery, pricing, and privatization strategies; cost-effectiveness studies; and a personnel development plan.

Many of the activities recommended in the final A.I.D. evaluation summary (prepared in March 1989) could have been undertaken as much as a decade or more earlier. The major recommendations of this report *all touched on sustainability*: (1) increase prices of CSM products and add new ones to the line, (2) assess management training needs at central and regional levels and prepare a management plan, (3) decide if additional operations research could be undertaken, (4) conduct a full-fledged cost-recovery study, (5) conduct a comprehensive self-sufficiency study, and (6) develop alternative organizational plans for CSM with ONFP. The Mission appeared to recognize that such steps could have been undertaken much earlier. Indeed, the entire report included only the following lesson learned: "When a program has been nurtured for over 20 years by donors, introducing the notion of self-sufficiency, and preparing the program for donor withdrawal, requires 7 to 10 years."

Financing commodities. Contraceptive commodities are one of the most expensive items in any family planning budget. Donors and governments need to project the level of commodities required, the prospects of increased costs, and the potential for local production. A.I.D. could have examined options for financing contraceptives much earlier. If undertaken early in the life of any program, studies of this type might help convince host governments to begin planning for sustainability early.

A.I.D could have funded studies of future contraceptive requirements, demands, and cost implications, in the same way that it funds the DHS. Such a study was undertaken recently for the four major developing regions (Africa, Asia, Latin America, and the Near East) (Family Health International n.d.). This regional analysis suggests the kinds of analyses that should be undertaken on a country-specific basis. The study found that in the year 2000, of the four regions, the Near East region will have the second highest percentage increase of married women of reproductive age and the second highest increase in contraceptive costs. (The study made specific regional cost projections that are not included here.) Using this kind of information, A.I.D. and the Government of Tunisia could have begun planning the financing of future commodities. By failing to examine future demand and contraceptive costs, A.I.D. neglected an important aspect of planning for sustainability.

Privatization and sustainability. If A.I.D. had tested privatized pilot programs from the beginning of the program, it might have made a greater contribution to sustainability. Although the Tunisians resisted privatization, A.I.D. could have provided funds for testing privatized pilot programs (or public/private sector partnerships), possibly in one small geographic region, to compare results with public-sector managed programs. Had this activity been undertaken in the late 1970s or early 1980s, perhaps some components of the Tunisian CSM program (e.g., media research) would now be managed by the private sector, freeing up public sector staff and resources to concentrate on other areas.

Sustainability of research. A.I.D. did not provide technical assistance and training in "appropriate methodologies" to contribute to sustainability of research. It could have placed greater—or at least equal—emphasis on providing assistance for the "low-tech, no-budget" research of the regions rather than the "high-tech, high-budget" research of the center. The A.I.D. Project Assistance Completion Report (1990) identified an important area of concern with respect to research at the center—the lack of effective transfer of computer technology knowledge. This situation was further exacerbated by the lack of computer literacy of most of the research staff at ONFP.

While A.I.D. provided much needed assistance for large-scale surveys, this type of research is expensive. The team’s key informant interviews suggested that

ONFP cannot sustain it. A.I.D. also might have trained researchers, especially managers of programs in rural areas, in lower cost studies, using some of the newer, more rapid methods that would have been sustainable when A.I.D. funding ended.

Conclusions of Tunisia Family Planning Managers

In each key informant interview, the CDIE team asked ONFP officials and managers what they had learned from their experience with the national family planning program. The team felt the following to be the most important ideas expressed.

Policy. Political will is the most important ingredient for the success of a family planning program. President Bourguiba initiated almost revolutionary changes; this kind of leadership and support is critical for program success.

To mobilize support for family planning among the population, it is much more important to emphasize child spacing as a health measure and the value of smaller families for the welfare of the family than it is to speak of national demographic problems and objectives. One official commented, "You won't get anywhere if you tell them to do this for their country." It should be called "santé familiale" (family health), not "fertility reduction."

The integration of family planning into other services, such as health services, is an objective in Tunisia as well as in many other countries. It is important, however, to implement this objective flexibly and in a pragmatic manner. The bottom line of integration is that there should be no decline in the accessibility and quality of family planning services. If, for example, Ministry of Health facilities are not yet adequate for family planning services, or staff attitudes are not favorable, or the competence of program managers is lacking, or competition from other service demands would smother attention to family planning, then integration should not be imposed prematurely.

Management. Decentralization of decision-making, especially involving budget authority, results in more efficient use of resources, more timely implementation of programs, better deployment of personnel, and improved quality of service. (This point was made by several delegates.)

Planners should use field-based, participatory, bottom-up techniques like the diagnosis, planning, and evaluation program. The bottom-up approach ensures relevant and timely management training because training topics are derived from real needs and current conditions. This approach works well with modular forms of teaching.

Services. Tunisia could have involved men more in family planning from the beginning. Prenatal consultations help build a constituency for family planning. In fact, Tunisian women called a prenatal consultation "family planning" because the ONFP mobile clinic provided the prenatal services in addition to family planning services.

Training. Planners should begin as soon as possible to work with the permanent training institutions to establish family planning as part of formal, preservice preparation at all levels—for midwives, social workers (animatrices), nurses, and doctors.

In-house training staff should be kept small; programs should rely as much as possible on outside sources. This method not only is cheaper, but even more important, it contributes greatly to flexibility and efficiency in mounting new, topical training programs and in ensuring that the best teachers are used for whatever courses are given.

Programs should evaluate the impact of training on improved performance and keep account of the cost of the training. Evaluation of this kind is very important for sustaining an institution's commitment to training programs.

Other Conclusions

Focus groups as a management tool. An important element in quality management and quality service delivery is understanding clients' needs. The team's focus group discussions proved useful in identifying some of these needs. For example, exposure of myths about negative side effects of contraceptive methods demonstrated that clients need accurate information. As in many other countries, A.I.D. sponsored focus groups in Tunisia mainly for market research. CDIE concludes that more attention might well be given to the use of focus groups as a management tool to assess clients' needs, to improve service delivery, and to monitor quality of care.

Use of evaluation findings. The team's review of A.I.D. Project Papers showed that, for the most part, new project design took into account the evaluation of the preceding project. In addition, A.I.D. did not impose programmatic concepts in the absence of pilot studies. For example, the A.I.D evaluations conducted in the late 1970s showed that the number of acceptors was not increasing and that contraceptive prevalence in the regions was extremely low. Accordingly, A.I.D. and the Government of Tunisia designed strategies to increase rural outreach. Again, evaluations in the early 1980s showed that training levels were low and contraceptive distribution through the private sector was not occurring as rapidly as anticipated. Consequently, the final bilateral project in

1985 was designed to address these deficiencies. However, the evaluations failed to address the lack of attention to sustainability, the fact that there was never a long-term strategy for family planning, and the relative nonparticipation of the private sector.